

# Mouse Calc

by Luc Barthelet

translated by Dick Carter

Hardware required:  
Apple IIc or 128K Apple IIe  
Video Monitor (Double Hi-Res)  
Apple Mouse



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# INTRODUCTION

Welcome to Mouse Calc, an electronic spreadsheet and chart maker. You will need your mouse to take advantage of its numerous functions because, thanks to the mouse, Mouse Calc is simple and especially easy for beginners. The more familiar you are with Mouse Calc, the more you will see and appreciate how many different tasks you can use it for. Before long, you will be an experienced user and will be able to use Mouse Calc as a flexible and intelligent tool to exploit your Apple II to its full potential.

Mouse Calc requires an Apple IIe or IIc with at least one disk drive. If you have an Apple IIc it comes with one built-in drive. A second disk drive will considerably reduce the need for changing disks, which will make Mouse Calc even easier and more pleasant to use.

If you are a beginner, before starting the lessons in this manual you should know:

- How to start your computer and insert a disk. (Your Apple manual will tell you how to do this.)
- Where  is on your Apple keyboard.
- That's all.

Even if you have never used a mouse before, you can learn in no time. It is a marvelous tool, and using it will become second nature very quickly.

This manual is divided into three parts:

**1. Tutorial:** this contains six lessons that will help you get acquainted with your Apple, your mouse, and Mouse Calc. This part does not teach you all of Mouse Calc's commands, but will get you started building and graphing your own complex spreadsheets. For those of you who are experienced with spreadsheet programs, you may want to skim the Mouse Calc Tutorial.

**2. Reference manual:** this covers all commands and options offered by Mouse Calc, including those that are not directly accessible in the pull-down menus. It includes many examples to help you master each command quickly. At the bottom of each page you will find references that tell you where to look in the manual to find additional information on related topics.

**3. Sample Files:** this is a collection of examples of applications of Mouse Calc to specific problems. These samples provide further illustrations of Mouse Calc's potential. They are recorded on the SAMPLES disk supplied with this manual.

You are about to learn a new way to use the Apple II. No more need to memorize long commands with names only a programmer could love. Now **you** are in charge.

# *TUTORIAL*

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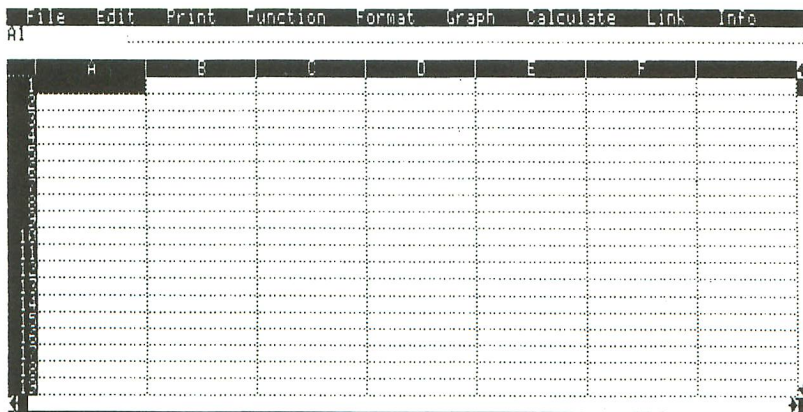
# 1. LET'S DO SOME BILLING

## ***What you will do in this lesson:***

You are about to learn how to prepare a bill using Mouse Calc. You'll use your keyboard to type in the alphabetical and numerical information needed to prepare the bill. For now you will use the arrow keys to move from one area of your spreadsheet to another. You'll write a formula that automatically computes the total for each item billed.

A bill is a tangible record of a commercial transaction, and it might be prepared in a number of different ways. You could do all the arithmetic in your head and write down the results or you could use an abacus or a pocket calculator. Each method requires a certain amount of know-how, and every age has developed its own tools to help do the job. You are about to begin learning how to use the most modern billing tool there is.

You should now place your Mouse Calc disk in drive one and turn on your computer. After you see the title page which says Mouse Calc, a blank spreadsheet will appear.



## **NOTE**

*Just to keep things straight so that we'll know what we are talking about, let's adopt a few terms: you'll be using a spreadsheet*




made up of 63 **columns** starting at A, going through the alphabet to Z, continuing with AA, AB, AC, and so on, up to BK. Each column is crossed by **rows** which are numbered from 1 to 254. We call the box formed by the intersection of a column and a row a **cell**. For instance, cell A74 is located in row 74 of column A.

The top line of your screen contains words that represent **menus**. You'll learn more about menus as we go along. We call this line the **menu bar**.

The second line is a dotted line which we call the **content line**.

The flashing rectangle you see on your screen is called the **cursor**. It tells you where the characters will appear when you begin typing. It should now be located on the third line of your screen. We call this line the **work line**.

The RETURN key will be shown as: . Other keys with words on your keyboard will be represented the same way.

## HOW TO ENTER TEXT INTO A CELL

To prepare a bill you have to know what kind of merchandise is involved, what the unit price of each item is, and what quantity of each item is to be billed.

We'll write the name of the file in the first row of the grid. Cell A1 is lit, and that means that it is waiting for you to put information in it.

To plunge right into bill-making, type the word "Bill".



Cell A1 is lit, type: **BILL**

As you type, each character is entered in the lit cell. The characters also appear on the work line where the cursor is flashing.

Each time you type a character the cursor moves one step to the right. As soon as it sees that the first character is a letter and not a number, Mouse Calc understands that you are entering text. This is important to Mouse Calc because it treats numbers and text differently.

That is why, as you can see, the work line reads

Text: Bill

Check to make sure you haven't made any typing mistakes. If a word is misspelled, use  to erase the mistake and retype. Then press .

Cell A1 is lit, press .

## NOTE

As you see, we will indicate each instruction twice, once in the text of the lesson, and again on a line by itself. You should read the instruction in the body of the lesson first **without doing it** in order to understand what you will be doing and why. Then you should follow the instruction that is written below it. This format is used so that when you want to review the instructions rapidly, they will be easy to find.

By pressing `[return]`, you have informed Mouse Calc that the lit cell will receive no further information. The typed entry which was on the work line is now on the content line.

Cell A1 is still lit and it contains the information you have just typed, the word `Bill`.

## NOTE

It is important to understand the difference between the **work line** and the **content line**. As its name indicates, the **work line** is where you do your work: it displays the information you are typing as you type it, before it is entered into the cell you are working on. The **content line** displays the information which a cell contains once you have finished entering material and have pressed `[return]`.

Get into the habit of pressing `[return]` each time you finish typing an entry and are satisfied that it has no mistakes. **You** know when you've finished working on a cell, but Mouse Calc doesn't know until you tell it so.

## What to do if you make a mistake:

When a word is misspelled and you haven't yet pressed `[return]` you can use the `[delete]` key to erase any mistakes. Whenever you press `[delete]`, you move the cursor to the left. This deletes what you have written character by character, both on the work line and in the lit cell. You should press this key until the mistake is erased and then type in the missing characters.

However, if a word is misspelled and you have already pressed `[return]`, you can no longer use `[delete]`.


The simplest thing to do in this case is to retype the entry and then press `[return]`. To remove the contents of a cell, you can just press `[space]` and then press `[return]`.

This is only possible when the cell you want to correct is lit; so, if it isn't lit, use the arrow keys to move to it. We will practice moving to a cell on the next page.

It is a very good idea to systematically check what you have typed **before** you press `[return]`.

## TYPING IN A SERIES OF ENTRIES




The third line of the spreadsheet will contain the **column headings**.

Press  twice. This moves the center of the action downwards, to light up cell A3.


Cell A1 is lit, press  twice.

You're now in cell A3. In this column, column A, we will list the items to be billed, so type the word "Item".


Cell A3 is lit, type **Item** (but do NOT press )

Now we want to go to column B. To move to the right, press . You do not need to press  when you use one of the arrows after completing your entry. The arrow keys act like  telling Mouse Calc that you are finished typing.


Cell A3 is lit, press 

Column B will give the price per pound of each item to be billed. Type the word "Price" in cell B3, then press .

Cell B3 is lit, type **Price** 





You are now in the next column. This column will give the total amount expressed in pounds of each item bought. Type the word "Quantity", and then press .

Cell C3 is lit, type **Quantity** 

You are now in column D. This column will indicate the total cost for each item billed. You will obtain that by having Mouse Calc multiply the unit price by the quantity bought. Type the word "Amount" in cell D3, then press .

Cell D3 is lit, type **Amount** 

### NOTE

*So far you have used two **arrow keys**, the down arrow key  to go down a row, and the right arrow key  to go to the next column on the right. The two arrow keys you have not yet used work the same way: the up arrow key  moves you up a row and the left arrow key  moves you one cell to the left.*



## YOUR FIRST CALCULATION WITH MOUSE CALC

The first item to be billed will be entered on the fourth row of the spreadsheet.

Use the arrow keys to get to cell A4.


Cell D3 is lit, press    

Type the name of the item "Pears" in cell A4, then go to cell B4.



Cell A4 is lit, type **Pears** 

To enter the price of a pound of pears, type ".89".

Cell B4 is lit, type **.89**



The work line displays Value: .89. When you confirm this entry by pressing , the number moves to the content line.

Cell B4 is lit, type 

Now you have moved to cell C4 using . Type "3", the number of pounds of pears to be billed, and confirm it by pressing .

Cell C4 is lit, type **3** 

### What to do if you make a mistake:

Pressing  erases the last character entered on the work line. At this time after you have pressed  you must retype the whole cell if you want to make any change in its contents. We will explain how to change only part of a cell later on in this manual. This is called editing.

#### NOTE

When Mouse Calc sees a number or a decimal point as the first character on the work line, it understands that you are making a numerical entry, not an alphabetical one, and it will display the figures you type on the right side of the lit cell.

Now you are going to write a **formula** to calculate the total price. This is a useful operation, but it requires some care. The formula will calculate the total cost of a billed item




automatically. Mouse Calc will do all the work (that's what it's for) but you have to help it a little by telling it precisely what to do.

Now let's move to the Amount column.

Cell C4 is lit, press 

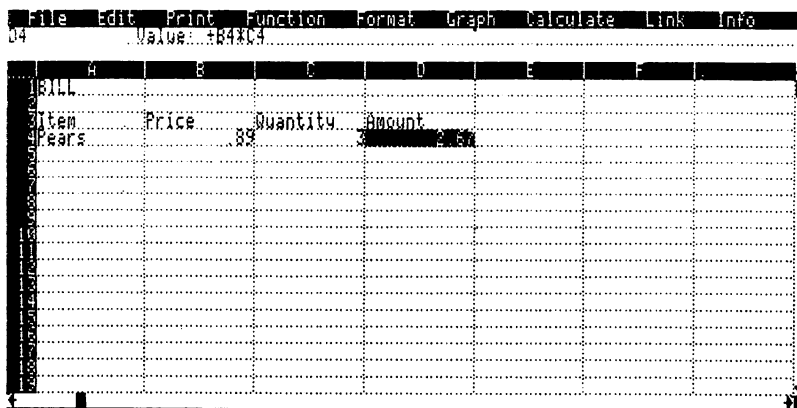
In cell D4 type a plus sign (+). This is the sign that indicates the beginning of a formula to Mouse Calc. To get the total cost of the pears bought, we have to multiply the unit price given in cell B4 by the quantity given in cell C4. Type B4\*C4. As in many other computer applications, the symbol for multiplication is an asterisk (\*). This is so the computer can tell it from the letter "x".

Cell D4 is lit, type **+B4\*C4**

What you have just typed tells Mouse Calc to perform a computation. You should see Value: +B4\*C4 on the work line. To show that the formula is complete you must press . Cell D4 should now display 2.67, which is the result of the calculation.

#### NOTE

*You have just finished typing the first entry of a bill. The plus sign (+) is required to indicate the beginning of a formula. If you leave it out, Mouse Calc will think that you are typing text and not an operation. The asterisk (\*) is the only multiplication sign in Mouse Calc. An upper or lower case "X" just represents the twenty-fourth letter of the alphabet.*



The screenshot shows the Mouse Calc spreadsheet interface. At the top is a menu bar with the following options: File, Edit, Print, Function, Format, Graph, Calculate, Link, and Info. Below the menu bar is a status bar that reads "D4 Value: +B4\*C4". The main area is a spreadsheet grid with columns labeled A through F and rows numbered 1 through 10. A table titled "BILL" is entered in the grid. The table has four columns: Item, Price, Quantity, and Amount. The first row of data is for "Pears", with a Price of .85 and a Quantity of 3. The Amount column is currently empty.

Item	Price	Quantity	Amount
Pears	.85	3	


## LET'S PLAY AROUND A LITTLE


So that you can really see how useful formulas are, we suggest that you do another calculation. Change the quantity and the price of the pears to be billed.

First move to the "Quantity" column to change the number of pounds.

Cell D4 is lit, press 


Type the number 4, and don't forget to press .

Cell C4 is lit, type **4** 

Cell D4 now displays 3.56. Now move to the price column, to B4, using .

Cell C4 is lit, press 

Type the price .64 and validate by pressing .

Cell B4 is lit, type **.64** 

As you see, Mouse Calc has recalculated the total and now cell D4 displays the value 2.56.

### NOTE

*This example shows clearly how formulas work. Mouse Calc saved the formula you typed in earlier and has just used it again to automatically recalculate the total.*


*Of course, you could have just written the formula as .65\*4, as you would have if you were using an ordinary calculator. But instead of typing in the actual values for the terms of the calculation, you gave the names of the cells involved in the operation. In this example the operation is multiplication, so Mouse Calc multiplied the values given in the cells.*


*You have just seen that any change in the contents of a cell has an automatic effect on the **result** of the calculation. In other words the formula is **active**: once you have typed it in, it's always ready to apply to the cells you have named.*



### Exercise


Calculate the price of 19 lbs. of pears at 69 cents a pound.

**Answer:**

The last cell that was lit up was the one for the "Price" column. In this cell you type the new price .69. Then confirm your entry by pressing  once.

In cell B4 you type **.69** .

Cell D4, in the "Total" column, will immediately display the value 2.75. By pressing , you should move to cell C4. Type the quantity "19" and then press .

In cell C4 you type **19** .

Cell D4 of the Amount column should now contain the value 13.11.

***In this lesson you have learned:***

- how to use the keyboard
- how to enter text
- how to enter numbers
- how to write a formula.

## 2. MORE BILLING

### ***What you will do in this lesson:***

Using Mouse Calc, you'll finish the bill you started in lesson 1. Then, you'll use the mouse to move around in your spreadsheet and to write a formula. You'll give a name to your file by picking the option *Name* in the menu *Info*. Finally, you'll use the SAMPLES disk and pick the option *Select volume* in the *File* menu.

### ***RESETTING THE SPREADSHEET***

First of all, we have to set up the spreadsheet so that it looks the way it did at the end of lesson 1. If you have not turned off your computer and your spreadsheet is still in the computer's memory, then skip to the section "ADDING ANOTHER ROW TO THE BILL".

If you turned off your Apple after lesson 1, you should now type in the entries as they were when you finished the lesson. Enter the current prices and quantities.

In cell A1 type **Bill**

In cell A1 press  twice





In cell A3 type **Item**

In cell A3 press 

In cell B3 type **Price** 

In cell C3 type **Quantity** 


In cell D3 type **Amount** 

In cell D3 press    


Of course, there are other ways to get from D3 to A4. It doesn't matter how you get there, as long as you get there!

In cell A4 type **Pears** 

In cell B4 type **.69** 

In cell C4 type **19** 

In cell D4 type **+B4\*C4** 

You should now see 13.11 in cell D4, if you have remembered to validate your entry by pressing .



## ADDING ANOTHER ROW TO THE BILL

The second item to be billed goes in the fifth row of the spreadsheet.


Move to cell A5 using the arrow keys so that you can write in the next item.



Cell D4 is lit, press    

Now type in the word "Apples" and press .


Cell A5 is lit, type **Apples** 

You should now be in the price column. Here, type the price .59 and move to the right.

Cell B5 is lit, type **.59** 

As in the previous case, you used  to get to C5. Type the number 5 and press .

Cell C5 is lit, type **5** 

Now you have to write the formula in the amount column to get the result. Type + B5 \* C5. Check what you have typed to make sure there are no mistakes and don't forget .

Cell D5 is lit, type **+B5 \* C5** .

Cell D5 should now display 2.95.

As you have no doubt noticed, a formula acts only for the cells you designate. So for now, every time you change rows you must type the formula again.

## USING THE MOUSE

You are now familiar with the arrows and you know how to write a formula and how to correct mistakes. Now you're ready to practice using the mouse. You can use the mouse to make entries and to move the **pointer** on the screen. You'll find that the mouse lets you do certain things much more easily than you can do them using only the keyboard,

so you'll be using the keyboard less once you become more familiar with your mouse.

With the mouse lying button side up on your desk or table, slide it around. The arrow head you see moving around on the screen is the pointer. By sliding your mouse around you can make the pointer go where you want it to go. If you pick up the mouse and slide it around in the palm of your hand, you'll notice that the arrow moves much more erratically.

If you slide the mouse around on a vertical surface (i.e. a wall), the arrow won't move at all. The best way to move the pointer around is by sliding the mouse on a horizontal flat surface.

## **CLICKING WITH YOUR MOUSE**

Now you're ready to put the third item to be billed in the sixth row of your spreadsheet.

Use your mouse to place the pointer inside cell A6 and then press the mouse button. It will click and the cell will light up. When it does you can release the button. This is called **clicking**. Now you can type in the next item to be billed: oranges.

Click on cell **A6**, then type **Oranges** return

### **NOTE**

*Up to now you have used either return or the arrow keys to validate an entry. From now on, you should validate each entry once you have typed it by pressing return. Mouse Calc will wait for you to tell it that the entry is complete before it really puts it in the lit cell, just as it expects you to tell it when a formula is ready to run.*

Move the pointer to the next cell and click it. Then type .62 and validate with return.

Click on cell **B6**, then type **.62** return

Now move to cell C6 and enter a 4.

Click on cell **C6**, then type **4** return

Click in the "Amount" column in the same row; when cell D6 is lit you can begin writing in the formula by typing the plus sign.

Click on **D6**, then type **+**

So far you've been typing in cell names with the keyboard as you built a formula, but now that you've started using the mouse you can speed things up. All you have to do is click on each cell the formula is to apply to. Put the pointer inside cell B6, click, and then type **\***, which is the sign for multiplication.

Click on cell **B6**, then type **\***

Click on cell C6, then validate the formula by pressing **return**.

Click on cell **C6**, then press **return**

Cell D6 in the Amount column now displays 2.48.

#### NOTE

*You must click a cell before typing in the information you want to put there. Cell D6 remained lit while you were building the formula, even though you clicked two other cells. This is because the plus sign signals to Mouse Calc that you are writing a formula for the cell which is lit, in this case cell D6.*

## THE LAST ROW AT LAST

Now we have reached the last row of our bill. You will now put the fourth item to be billed in the seventh row of your spreadsheet.

Click on cell A7; when it is lit type the word "Grapes". Of course you must also press **return**. By now it's become a habit. A7 is still lit.

Click on cell **A7**, type **Grapes** **return**

Now click on cell B7 and type .75, then validate with **return**.

Click on cell **B7**, then type **.75** **return**

Next click on cell C7, type 7, and press **return**. Then click on cell D7 where we'll build the formula. Type a **+**, click on B7, type a **\***, then click on C7 and press **return**.

Click on **C7**, then type **7** **return**

Click on **D7**, then type **+**

Click on **B7**, then type **\***

Click on **C7**, then press **return**

After pressing **return**, the amount in cell D7 should be 5.25.

#### NOTE

*Every cell that contains the result of a calculation gives two kinds of information: the first is the value which is displayed in the cell, the second is the formula, which is only visible when you want to see it. If you want to see the formula that produced a given number, all you have to do is click on the cell that contains the number, and the formula will appear on the content line.*

In a bill, when you draw a line at the bottom of the amount column it means that you are adding up the individual amounts to obtain the total amount. Mouse Calc works much the same way, except that you don't need the line.

We will choose row 12 to contain the total amount of our bill since we would like to enter more data later on.

Click on cell C12. When it is lit, type in the word "Total" and then press **return**.

Click on cell **C12**, then type **Total** **return**

We get the combined total of all items billed by adding all the figures in the "Amount" column. Click on cell D12, since that is where the total will appear. Now you have to tell this to Mouse Calc by typing the **+** sign.

Click on cell **D12**, then type **+**

Now click on cell D4, to tell Mouse Calc what the first value to be treated by the formula is, then type **+** again to indicate that the formula is not finished yet.

Click on cell **D4**, then type **+**

Click on cell D5, then type **+** again to indicate what the second value is and to show that the formula is still not finished.

Click on cell **D5**, then type **+**

Click on cell D6, then type  $+$  again, since there's still more to come.

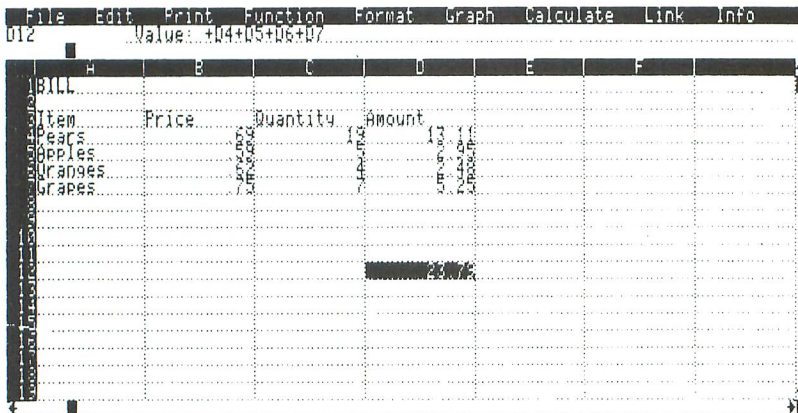
Click on cell **D6**, then type  $+$

Click on cell D7. Now the formula is finished, so press  $\text{return}$  to signal this to Mouse Calc. In cell D12 you will see 23.79. If your total is different, try it again.

Click on cell **D7**, then type  $\text{return}$

The content line should read: Value: +D4+D5+D6+D7.

Congratulations! You are on your way to becoming a professional Mouse Calc user.



You began to build the spreadsheet which you have just finished by getting familiar with the way the arrow keys are used and then by learning how to use the mouse. With these skills you will be able to learn the rest of Mouse Calc's functions.

## ***SELECTING A COMMAND***

If you want to take a break, you should save your work by naming the spreadsheet and saving it on the SAMPLES disk provided for this purpose. You do this so you can have a record of your work and use it in the days ahead. Also, if you turn off your Apple, or if there is a power failure, all your work will be lost unless you have saved it first.



At present, the bill which you just created is in the computer's memory, called RAM. This is the "volatile" memory of your computer. Whatever is stored in this memory is lost when the computer is turned off. To avoid losing the information you have typed into the computer, you have to transfer what is in memory onto a disk. We strongly advise you to save any work in progress once a sizable amount of information is in the computer. This will protect you from losing large amounts of information and having to retype it.

#### NOTE

*You are now going to learn a new tool for working with Mouse Calc. But first we need to define some more words.*

*When we write **Select** followed by the name of a command this means that you are to choose that command, using the pointer of your mouse.*

***Type** means that you should enter information into Mouse Calc using the keyboard as you have up to now.*

*The top line on your screen is called the **Menu Bar**. Clicking on one of the words on this line allows you to choose a command.*

## NAMING A SPREADSHEET

The spreadsheet you have just created does not yet have a name. To save it on a disk you have to give it a name.

To do this you select one of the commands on the menu bar. The menu bar is always visible on the screen and always accessible. By using the mouse you can "pull down" a menu and choose the command you want.

In order to select a command using the mouse, do the following: move the pointer onto one of the words on the menu bar, press the button, then, without releasing it, "drag" the pointer down to highlight the command you want, and then release the button. The operation of selecting a command is not completed until you have released the mouse button.

Now you are ready to use the pull-down menus to choose commands. You are going to select the command *Name* from the menu *Info* in order to give your spreadsheet a name.

Move the pointer to the word *Info* in the menu bar.

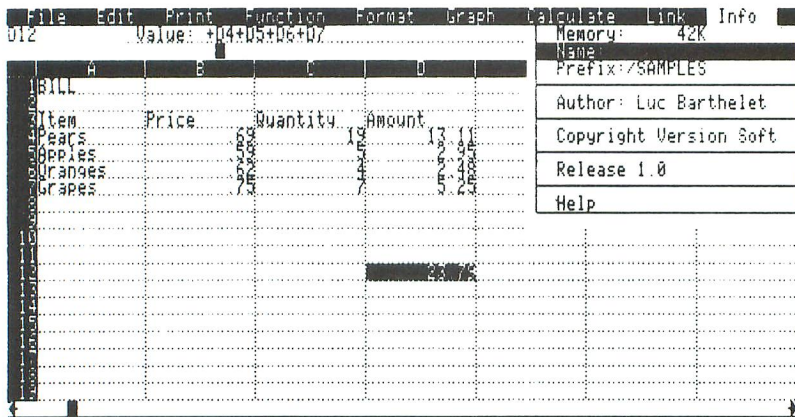


Press the mouse button and hold it down. This opens a menu which contains information about Mouse Calc and allows you to choose a command.

Continue to hold down the button and move the pointer downward until it is on the command *Name*, then release the button to select this command.

Mouse Calc will now ask you for the "Name of new file:". Call this spreadsheet "BILL". Type **BILL**

Tell Mouse Calc that you have finished typing the name of the file by pressing .



#### NOTE

*You have just chosen the command **Name** in the **Info** menu to give your spreadsheet a name. This is necessary before you can save your spreadsheet as a file on a disk.*

*The name of a file can contain no more than 15 characters. You can use letters, numbers, or a period (.), but no spaces, so don't use the space bar when typing the name of a file.*

## CHANGING A DISK

You can now store your spreadsheet on a disk. The disk named SAMPLES is furnished with Mouse Calc for that purpose. You can use any other disk as long as it is

properly formatted, but NEVER store anything on a Mouse Calc program disk. If your Apple has two disk drives, all you have to do is put the SAMPLES disk in the second disk drive. You do not have to remove the Mouse Calc disk from the first drive. The instructions that follow assume you have only one disk drive.

Remove the Mouse Calc disk from the drive.

Place this disk in its protective envelope.

Put the SAMPLES disk in the drive.

#### NOTE

*Removing the Mouse Calc disk from the drive does NOT erase the Mouse Calc program. It remains in your computer's memory, acting as it did when the disk was in the drive.*

*Remember that disks are very fragile. Avoid leaving them lying around on your desk. Always put them back in their protective envelopes and store them in a safe place.*

You must signal to Mouse Calc that you have changed disks. To do this, you must select *Select volume* from the *File* menu.

Do this by using the mouse as you did previously:

Move the arrow onto the word *File*, press the mouse button down, and hold it.

Drag the pointer down until *Select volume* lights up.

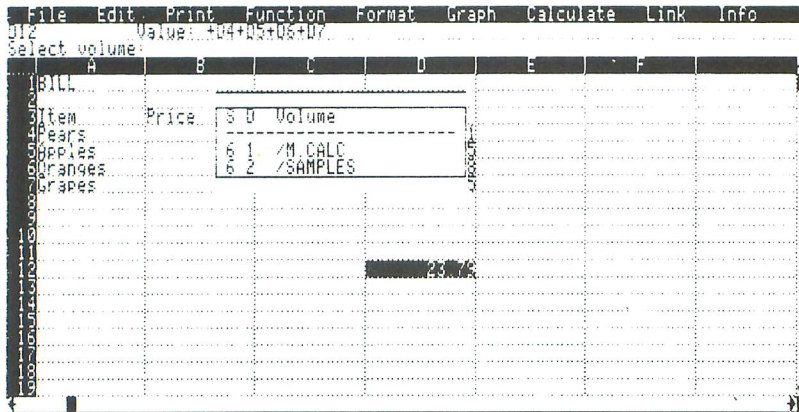
Release the mouse button.

The disk drive will start working when Mouse Calc tells it to look for the name of the disk you have inserted. A window will open on the screen and you will see the name SAMPLES. Now you must tell Mouse Calc that the SAMPLES disk is going to receive information.

You do this the same way you light up a cell: put the pointer on the word SAMPLES in the window and click.

Click on SAMPLES.

You will hear the disk drive working again. Mouse Calc is searching for the SAMPLES disk.



## SAVING A FILE

Now you are going to store the spreadsheet you have named "BILL" on the disk called SAMPLES. You do this with the command *Save* from the pull down menu *File*.

Select *Save* from the *File* menu.

On the work line *Saving file* will appear.

The file "BILL" is now being saved. Your work will be recorded on the disk under this name.

When you save a file, you are sure to find it on the disk exactly as you left it when you come back to the computer and restart the program.

Now that you have saved your work, you can turn your Apple off without losing your file. Also, you don't have to worry about losing your spreadsheet in case of a power failure.

### ***In this lesson you have learned:***

- how to use the mouse and the menu bar
- how to select a command from a pull-down menu
- how to name and save a spreadsheet.

### 3. STARTING UP MOUSE CALC AGAIN

#### ***What you will do in this lesson:***

Here you'll load Mouse Calc into your Apple's memory, use the commands *Select volume*, *Open*, and *Save* from the *File* menu, and work with the SAMPLES disk.

#### ***USING COMMANDS***

If you have more than one disk drive, you will now practice operating with more than one disk. This is useful to help you get down to doing real work.

Take the SAMPLES disk out of the drive.

Turn off your Apple.

Put the Mouse Calc program disk in the drive.

Turn on the computer.

When the first screen page of Mouse Calc has disappeared, you know that the program is loaded into the computer's memory. If you have two disk drives, it is not necessary to take out the Mouse Calc disk; just insert the SAMPLES disk into the second drive. (If you have only one drive, take out the Mouse Calc program disk before inserting the SAMPLES disk.)


Put SAMPLES in the disk drive.

Move the pointer onto the word *File* in the menu bar and select the *Select volume* command.

Select *Select volume* in the *File* menu.

You will hear a purring sound as your Apple recognizes the disk.

#### ***What to do if you make a mistake:***

Pressing  will get you out of any command you have selected by accident.

#### NOTE

*You have just selected the **Select volume** command in the **File** menu. The window opened by this command gives information about the disks currently in the disk drives. You can see the name of the volume (the disk) in the second half of the window. Of course you know the name of the disk, but Mouse Calc doesn't. When you select **Select volume** you tell it that there is a different disk in the drive. Mouse Calc reads the names of all of the disks in your system and allows you to select the one you're going to work with.*

Put the pointer on SAMPLES in the window and click it.

Click on SAMPLES.

You have now told Mouse Calc that you are going to work with this volume. So now it knows this and can read the volume again.

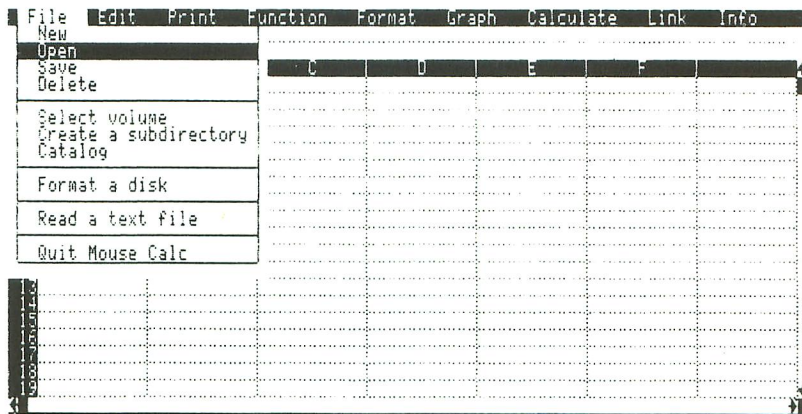
#### NOTE

*Mouse Calc has to recognize a volume **before** it can start working with it. It may recognize the name of a volume on line and display that name in the second half of the window, or it may refuse to work on the volume. Your Apple tells you that it can't work with a volume by making an unpleasant noise. Mouse Calc does it by displaying the message Error Volume not found + Click please. When this happens, you have to start over again by selecting **Select volume** with the right disk in the drive. This command can also help you find the name of a disk that you forgot to label.*

One volume can hold a number of files, each with a different name. In lesson 2, you saved a spreadsheet named "Bill". In order to get it back on your screen you have to select it from the disk.

Select *Open* in the *File* menu.

The window you see on the screen contains the names of all the files on your current disk (volume), SAMPLES. Only the files which are Mouse Calc spreadsheets can be "opened" by Mouse Calc. These files are represented by a spreadsheet icon (a small checkerboard with a white bar along the top and along the left). They are all ready to be "opened" (i.e. to appear on the screen).



#### NOTE

You just selected the command **Open** in the **File** menu. This command gets you information about the contents of a disk. Each name is followed by a number which indicates the size of the file expressed in terms of the number of blocks (see your Apple Reference Manual for an explanation of blocks).

When this command is selected the work line indicates:

- the name of the command selected
- the name of the volume
- the number of unused blocks remaining on the disk.

As you get more familiar with Mouse Calc, you will see how important this information is.

On the SAMPLES disk we have provided a bill which is identical to the one that you made in earlier lessons. It is called "SAMPLE.BILL". You should open it now.

Place the pointer right on the name of the file and click.

Click on SAMPLE.BILL.

#### What to do if you make a mistake:

Suppose you select another name by mistake. This is not a problem. Just start over by selecting **Open** and positioning the pointer on the name of the file or on the symbol just to the left of the name and then clicking.



## MAKING A COPY OF THE SPREADSHEET YOU HAVE SAVED

In earlier lessons you named a spreadsheet. You are going to do that again, but this time you will change the name of a file that already exists on the disk. After renaming the file, you will save it on disk again.

By doing this you will have made an exact duplicate of your spreadsheet because it will exist on your disk under two different filenames.

You will also save the spreadsheet which is on the screen onto your disk, so that you won't alter it permanently by doing the exercises which we will give you later. At present the screen shows the spreadsheet as it was when you saved it at the end of lesson 2.

You should now select the command *Name* from the *Info* menu.

Click on *Info* and select the command *Name*.

As soon as you select this command, Mouse Calc will ask you for the Name of the file. Let's call it "BILL.TAX" with a period rather than a space between the two words. Don't forget to press .

Type **BILL.TAX**

If you click the *Info* menu you will be able to read the new name of your spreadsheet: BILL.TAX. Now you have to save the spreadsheet; merely changing the name doesn't mean you have a new copy on your disk.

Select *Save* from the *File* menu.

When you release the mouse button Mouse Calc displays *Saving file* on the work line. Now the file is copied and saved on your SAMPLES disk.

## LET'S PLAY A LITTLE

Let's prepare a bill for Mr Bartlett, who has just bought the following items:

- 70 lbs. of pears
- 115 lbs. of apples
- 95 lbs. of oranges
- 65 lbs. of grapes.

What to do:

In cell **C4** you type **70**

When you press , cell D4 in the amount column displays 48.3.

In cell **C5** you type **115**

After you press , cell D5 shows 67.85.

In cell **C6** you type **95**

After you press , cell D6 shows 58.9.

In cell **C7** you type **65**

After you press , cell D7 displays 48.75.

The last figure in the "Total" cell is 223.8.

You didn't need to do anything to the numbers in the Amount column or retype the formulas. As you changed the quantities the values of the "Amount" column and the "Total" changed automatically.

When you moved from cell to cell, you either used the arrow keys or you clicked the pointer on the cell before typing in the new quantity.

As you have noticed, the results are not given in dollars and cents, but as ordinary numbers. In the next lesson you will learn how to format numbers so that dollar amounts will have a dollar sign and two decimal places while other amounts will not. It is useful to be able to format numbers so that your spreadsheet is more accurate and easier to work with.

### ***An exercise***

Calculate the amount to be billed for the following items:

- 17 lbs. of pears at .67 a pound
- 16 lbs. of apples at .51 a pound
- 11 lbs. of oranges at .79 a pound
- 13 lbs. of grapes at .65 a pound.

### ***Answer:***

It doesn't matter which column you started with. What is important is that you typed the prices and quantities in the right cells.

In cell **B4**, you should have typed **.67**

In cell **C4** you typed **17**

After typing these two figures, the amount in cell D4 became 11.39.

In cell **B5** you typed **.51**

In cell **C5** you typed **16**

When you pressed return, cell D5 became 8.16.

In cell **B6** you typed **.79**

In cell **C6** you typed **11**

The amount in cell D6 is now 8.69.

In cell **B7** you typed **.65**

In cell **C7** you typed **13**

The amount in cell D7 is 8.45.

In D12 you now see 36.69, the total value of the fruit.

### **NOTE**

*The exercises that you have just done did not affect the spreadsheet you saved on the disk. The changes you have made are in the memory of the Apple, not on the disk since you haven't saved them.*

You should now save the file on the SAMPLES disk. Use the *Save* command in the *File* menu to do so.

Select *Save* from the *File* menu.

When you release the button, you will see a question on the work line: `Replace existing file? (Yes/No):`.

This is because the disk already contains a file called `BILL.TAX` which you saved earlier. Mouse Calc is asking you if it should get rid of the former file by recording the new one over it.

You can answer yes or no by using the mouse or the keyboard. To use the mouse, you must move the pointer onto the word `Yes` or onto the word `No` and press the button. To use the keyboard, you only need to type a "y" or an "n". It doesn't matter whether the letters are capitals or not, and you don't need to press `return`.

Answer yes, using the mouse.

Click on `Yes`.

Mouse Calc will now tell you it is saving your file with the following message: `Saving file`.

You have just saved the file with the name "`BILL.TAX`", and erased the previous version on the disk. Don't worry though – "`BILL.TAX`" was just a copy of the file "`BILL`" which is still saved on your disk if you want to look at it again.

The lesson is now over, so you can put away your disks and turn off your Apple.

***In this lesson you have learned:***

- how to work with a disk
- how to *Open* a file
- how to copy a file.

## 4. OPENING A FILE AND WORKING ON IT

### ***What you will do in this lesson:***

First, you'll *open* "BILL.TAX" and compute the value of taxes to be added to the bill. Then, you'll use the commands *SX,XXX.XX* and *Right justify* in the *Format* menu. Finally, you'll save a file, and use the command *Catalog* in the *File* menu.

### ***OPENING BILL.TAX AGAIN***

You will now repeat what you did in lesson 3. You will load Mouse Calc into your Apple and then work with the SAMPLES disk.

Insert the Mouse Calc program disk into the disk drive.

Turn on your computer.


If you did not turn off your computer at the end of lesson 3, please restart Mouse Calc now by turning it off and back on. Once you see the title page on the screen and the drive has stopped turning, you can take the disk out of the drive and put it back in its envelope. Of course, if you have two drives you don't have to do this: just put SAMPLES in the second drive.

Insert the SAMPLES disk.

Click on *File* in the menu bar and then select *Select volume*.

Select *Select volume* from the *File* menu.

### ***What to do if you make a mistake:***

Pressing  will get you out of any command you have selected by mistake.

If you have inserted the right disk, the word SAMPLES will appear in a window on the screen.

Click on SAMPLES.

Mouse Calc is now ready: it has recognized the volume you inserted and you can now select the file you want to open.

Select *Open* in the *File* menu.

When you select *Open* you get a window that lists all the files on the current disk. You should see the names of the spreadsheets "BILL", which you saved in lesson 2, "BILL.TAX", which you copied and saved in lesson 3, and "SAMPLE.BILL", which has been saved for you on the SAMPLES disk. They are ready to be "opened", that is, to be copied into memory and displayed on your screen.

Click on BILL.TAX.

The spreadsheet has 36.69 in cell D12, which is the total amount of the billed items. The spreadsheet is exactly as it was when you saved it.

### **What to do if you make a mistake:**

*If you don't see the right spreadsheet on the screen, select **Open** again and repeat the process as described above.*

## **ADDING TAX**

As you know all too well, many cities, states, and countries have some form of sales tax which must be figured into the total purchase price of many articles. To make things more complicated, the percentage of the tax may vary according to the type of merchandise. With Mouse Calc, computing the sales tax is very simple, as you will now see.

Let's assume that the prices shown in our bill do not include the tax, and that we have to add it to obtain the total amount of the bill. Assume that the sales tax on groceries is 7%.

Cell C12 contains the word **Total** but does not specify whether this is before or after taxes. To make things clearer, correct the entry in C12 to specify that the total is before the sales tax by typing "Subtotal".

Click on cell **C12**, then type **Subtotal** 



## NOTE

*Although using the space bar is not allowed for names of files, it is perfectly acceptable when typing information into a cell, so if you were to type "Before Tax", for instance, you could do it and leave a space between the words.*

You will now put the amount of the sales tax for the billed items in the thirteenth row of the spreadsheet. Type "Sales Tax" in cell C13 (don't forget the space).

Click on cell **C13**, then type **Sales Tax** return

Next, you will enter in the formula for computing the tax. The value of the sales tax will be calculated on the basis of the subtotal of all items billed.

You will begin by selecting the cell and entering a formula by clicking in cell D13 and typing a  $\oplus$ . Then you will click on cell D12 to indicate which amount the formula is going to apply to. Then type an asterisk (\*), followed by the number 7 indicating the percentage of the tax. Next, you will type a slash (/), which is the symbol for division. Here, the number is 100. This is the way we will indicate percentages, since taking 7 percent of a number is like multiplying that number by 7 one-hundredths.

Click on cell **D13**, then type  $\oplus$

Click on cell **D12**, then type **\* 7/100** return

When you pressed return, cell D13 should have immediately displayed the number 2.5683 for the amount of the tax. As you can see, for the moment the amount is not rounded off to the nearest cent. We'll take care of that in a moment.

Next, we want the total (including sales tax) to appear in the fifteenth row of the spreadsheet.

This total is composed of the amount of the bill before taxes (the subtotal) plus the amount of the sales tax. We will indicate this in cell C15 so that it will be perfectly clear what the amount in cell D15 represents.

Click on cell **C15**, then type **Total w/tax** return

Now you must tell Mouse Calc where to put the total with tax. You will enter a formula which will make the new total appear in cell D15.

Click on cell **D15**, then type  $\oplus$

Click on cell **D12**, then type **+**

Click on cell **D13**, then press **return**

The label `Total w/ tax` is now followed by `39.2583`.

## ROUNDING OFF PERCENTAGES, A FORMATTING PROBLEM

Figures in a bill such as this are always rounded off to the nearest hundredth of a dollar (cent), not to the nearest ten-thousandth of a dollar as your bill now gives them.

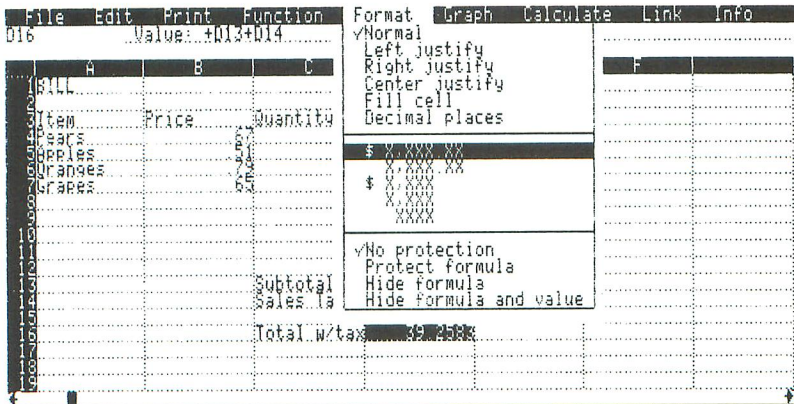
To correct this, you can select a command which determines the **format** of a number, whether that number represents a dollar amount, weight, or anything else.

### NOTE

*A numerical format is represented by a string of X's, which may or may not be preceded by a dollar sign.*

Cell D15 is lit, and it now shows the value after taxes with four figures after the decimal point. To change this and round off the amount we will use the *Format* menu.

Select \$X,XXX.XX in the *Format* menu.



The value is now given to the nearest cent. As you can see, it reads \$39.25. If the value before rounding off had been \$39.2543, then the format option you selected would have made it \$39.25.

You have just changed the way a number appears in one cell. As you will see more clearly in the next lesson, this change is purely visual and does not affect the real value assigned to the cell at all. To really round off a figure you must use the *ROUND* command you will learn later. This format change can be made for one cell or for a "block" of cells all at once.

**NOTE**

*A **block** of cells is a group of cells that are all connected and form a rectangle. A **range** of cells is a special type of block which is made up of a group of cells in one column or one row.*

Use your mouse to put the pointer in the first cell of the price column. When the pointer is in cell B4 press the mouse button and hold it down. Now drag the pointer down to cell B7. Cells B4, B5, B6 and B7 are now all lit. Release the button.

Select range **B4...B7**.

You have just selected a range in the spreadsheet extending from B4 to B7.

Now tell Mouse Calc what format you want for this range. Select the same command on the *Format* menu as you did before.

Select \$X,XXX.XX in the *Format* menu.

As soon as you select this command all the figures in this column will appear with a dollar sign and with two numbers after the decimal point; if any of the cells had contained whole dollar amounts, the command would have added two zeroes after the decimal point.

**NOTE**

*You just selected the **\$X,XXX.XX** command in the **Format** menu. What this does is insert a dollar sign, a comma when needed, and a decimal point followed by two decimals. When the number already has decimals, they are rounded off to the nearest cent.*

Now continue with the cells that haven't been changed yet.

Click on cell **D12**.

Select \$X,XXX.XX in the *Format* menu.

The cell for the subtotal before tax now shows \$ 36.69. The only change you see is that D12 now contains a dollar sign. Follow the same procedure for the cell giving the amount of the tax.

Click on cell **D13**.

Select \$X,XXX.XX in the *Format* menu.

Before you selected the command, D13 contained the number 2.5683. After selecting the format command, it should read \$ 2.57. Now the sales tax is rounded off to the nearest cent. If the cell had contained 2.5643, the format command would have rounded it off to \$ 2.56. Now select a range for the amounts in the Amount column. Put the pointer in D4; press the button, drag the pointer to D7, then release. Then select the command \$X,XXX.XX.

Select range **D4...D7**.

Select \$X,XXX.XX in the *Format* menu.

Since the cells already contained numbers with two decimal places, i.e., values in cents, all the command did was insert a dollar sign in each cell. If any of the prices had had more than two decimal places, then they would have been rounded off. If any of the prices had been whole dollar amounts, the command would have added a decimal point and two zeroes.

## **FORMATTING YOUR TEXT**

As you have noticed, Mouse Calc treats numbers and text differently. Cells that contain text are **left justified**, meaning that the text is on the far left side of the cell. Cells that contain a number are **right justified**, meaning that the number is on the far right.

This has the effect that you see in columns B, C, and D. The column title is on the left and the numbers below it are on the right. This makes your spreadsheet slightly confusing and hard to read.

You will now use the *Right justify* command in the *Format* menu to move these titles over the numbers they correspond to.

Select the range **B3...D3**.

Select *Right justify* from the *Format* menu.

The titles are now directly above the numbers in their columns, and "BILL.TAX" is a bill as professional-looking as anyone could ask for.

Item	Price	Quantity	Amount		
PEARS	\$2.99	1	\$2.99		
APPLES	\$1.99	2	\$3.98		
GRAPES	\$3.99	1	\$3.99		
SUBTOTAL			\$6.97		
SALES TAX			\$1.39		
TOTAL W/TAX			\$8.36		

## SAVING YOUR BILL WITH THE SALES TAX COMPUTED

We suggest that you save this bill now using the current name: "BILL.TAX". This will save the file over the old version. The procedure is the same one you used at the end of lesson 3.

Select *Save* from the *File* menu.

When you release the button, you will see a question on the work line: *Replace existing file? (Yes/No):*.

This is because the disk already contains a file called "BILL.TAX" which you saved earlier. Mouse Calc is asking you if it should get rid of the former file by recording the new one over it.



Answer yes, using the mouse.

Click on Yes.

Mouse Calc will now tell you it is saving your file with the following message: Saving file.

You have just saved the spreadsheet with the name "BILL.TAX", and erased the previous version on the disk.

## HOW TO FIND OUT WHAT IS ON A DISK

People who want to know the names of the files that they have stored on a disk often put a label on the disk with the filenames on it. As your collection of disks gets bigger, things are very likely to get out of hand unless you are very conscientious about this.

To help you keep track of what's on your disks, Mouse Calc provides the command *Catalog* in the *File* menu. By selecting this command you can see the total list of files saved on a disk.

Select *Catalog* in the *File* menu.

When you select this command a window will open on the screen containing the names of the files that are currently stored on the disk. You can check to see if the names "BILL.TAX", "BILL", "SAMPLE.BILL", and "SAMPLE.TAX" are there. You will also see the names of other files we haven't looked at yet.

### NOTE

The **Catalog** command provides information about the name and contents of a disk. When you select it, the name of the command, *Catalog*, appears on the work line, as well as the name of the disk you are working on and the number of "blocks" still available. In the window that opens up on your screen you see the name of each file on the disk followed by the size of the file in blocks. On a new disk there are 273 available blocks. The number of files you can store on it varies with the size of the files, of course. (See your Apple Reference Manual for a complete explanation of what blocks are).

This window shows the names of up to fifteen files at a time. If there are more than fifteen files on the disk, you need to use your mouse again to see the names of the rest of them.



Put the pointer on the arrow pointing downward in the lower right hand corner of the window and click.

Click on the down arrow.

The window will then show the rest of the names on the disk. When you want to get the first fifteen names back, put the pointer on the arrow pointing upward in the upper right hand corner of the window and click again.

Click on the up arrow.

When you want to signal to Mouse Calc that you are through with the catalog command, click on the phrase (Exit window) at the bottom of the window.

Click on (Exit window).

The lesson is now over, so you can put your disks away and turn off your Apple.

***In this lesson you have learned:***

- how to open a file
- how to select a range on the spreadsheet
- how to rewrite numbers using the *Format* commands
- how to save a revised version of a spreadsheet in place of the original.

## 5. HOW TO PRESENT A SPREADSHEET

### ***What you will do in this lesson:***

You'll duplicate a file using the *Name* command in the *Info* menu, solve a problem of rounding off numbers, repeat a formula for a range using the commands *Copy* and *Paste adjusting* in the *Edit* menu, and save a file using the *Save* command in the *File* menu.

### **WORKING ON "SAMPLES" WITH MOUSE CALC**

By now you should be completely familiar with the following:

- how to start up Mouse Calc
- how to *Open* a file from a disk
- how to duplicate a file.

Just to make sure, open a file from the SAMPLES disk without reading the following instructions. Go right to the next section called, "A PROBLEM WITH ROUNDING OFF DECIMALS". Open "BILL.TAX" from the disk and then rename the file "FINAL.BILL".

### ***What to do if you need help:***

*Consult the instructions given in this section.*

Insert the Mouse Calc disk in the disk drive.

Turn on your Apple.

If you have two disk drives you can work with one or both drives. If you choose to use both drives, there is no reason to take out the Mouse Calc disk. If you only have one disk drive, remove Mouse Calc and return it to its protective envelope.

Insert the SAMPLES disk.

Tell Mouse Calc you want to work with the SAMPLES disk using the *Select volume* command.

Select *Select volume* in the *File* menu.

Mouse Calc will display the name of the volumes currently available on your computer in a window it opens on the screen.

Click on `SAMPLES`.

Doing this will select the volume you are going to work with. Unless the work line says `Error volume not found + Click please`, then Mouse Calc is ready to work with the volume you selected. Now select the file that you want to appear on the screen.

Select *Open* in the *File* menu.

### ***What to do if you make a mistake:***

Pressing `[esc]` will get you out of any command.

The window now displays the files which can be opened. Tell Mouse Calc to open `"BILL.TAX"`.

Click on `BILL.TAX`.

#### **NOTE**

*A file named "SAMPLE.TAX" has been stored for you on the SAMPLES disk that is identical to the bill you made with tax computed. You can select this file if you forgot to save "BILL.TAX".*

When you do this, the spreadsheet will appear on the screen exactly as you saved it at the end of lesson 4. We suggest changing the name of the spreadsheet so that you can keep a copy of it.

Select *Name: BILL.TAX* in the *Info* menu.

When you have done this Mouse Calc will ask you on the work line to type the new filename. Rename the file `"FINAL.BILL"`. Don't forget to press `[return]`.

Type **FINAL.BILL** `[return]`

#### **NOTE**

*Remember that the space you get by pressing the space bar is interpreted by your computer as a character like any other. This*

*character is not allowed by Mouse Calc in filenames. That is why we have used the period to separate words in filenames.*

Now save the file "FINAL.BILL".

Select *Save* in the *File* menu.

After you release the mouse button, Mouse Calc displays *Saving file* on the work line. A new copy of the spreadsheet is now saved under the name "FINAL.BILL". It is ready to be completed.

## **A PROBLEM WITH ROUNDING OFF DECIMALS**

In lesson 4, you saw that the command *\$X,XXX.XX* in the *Format* menu rounded off values to two decimal places. What you will now learn is that this command only affects the way the numbers are represented on the screen and does not change their real values.

To understand what rounding off numbers really involves, let's make our bill a little more complicated. More and more frequently, when dealing with foreign customers or in scientific and technical applications, it is necessary to express amounts in the metric system using grams, kilograms, etc. Since this system is becoming more common, it will be useful to have a little practice with it.

So just for fun, let's suppose that in our bill the quantities are to be given in terms of grams and kilos. Let's change the prices too, since a kilo is a little more than two pounds. Let's suppose that pears cost \$1.40 a kilo, apples \$1.20 a kilo, oranges \$1.10 a kilo, and grapes \$1.50 a kilo. Type in these amounts now in cells B4, B5, B6, and B7.

Click on cell **B4**, then type **1.40**

Click on cell **B5**, then type **1.20**

Click on cell **B6**, then type **1.10**

Click on cell **B7**, then type **1.50**

Now let's change the quantities:

Click on cell **C4**, then type **3.133**

Click on cell **C5**, then type **5.123**

We've left the numbers as they were in cells C6 and C7, but now they are interpreted as kilos rather than pounds.

As you can see, the numbers in the Amount column have changed. D4 contains \$4.39, D5 contains \$6.15, D6 contains \$12.10, and D7 contains \$19.50. The subtotal, given in D13, now reads \$42.13. But there is a problem: adding the four amounts given in D4 to D7 gives \$42.14, but the subtotal only shows \$42.13! What happened to the missing penny?

To see what happened to the missing penny we have to look at the amounts before the decimals are rounded off. Select the range D4 ... D15.

Click on **D4**, drag the mouse down to **D15**, then release the button.

Now change the format back from dollar amounts to *Normal* format.

Select *Normal* in the *Format* menu.

Now you can read the complete decimal values of the amounts. For instance, cell D4 reads 4.3862, D5 reads 6.1476, D6 reads 12.1, D7 reads 19.5. If you add these amounts together, you will see that the amount given in D12 for the subtotal is correct! Using the format option \$X,XXX.XX presents each amount given in a cell as if it was rounded off to the nearest cent, but does not affect the calculations made by the formula. The formula uses the real figures, the ones that appear in the cell when you select the option *Normal* from the *Format* menu. The format \$X,XXX.XX made it look like the calculation was mistaken, but it was correct after all.

**NOTE** When you select the command **Normal** in the **Format** menu, it presents figures as they were before the use of \$X,XXX.XX.

We can eliminate this disparity between the figures shown on the screen and those used in the calculation by using Mouse Calc's *ROUND* function.

## USING THE FUNCTION "ROUND"

Prices are usually rounded off to the nearest cent, dollar, etc. To perform this operation of rounding off you use a function of Mouse Calc called ROUND.

When you selected *Normal* the amount column remained lit. When you want to round off some figures, you must indicate which cells are involved and how they are to be affected. Let's first do this for one cell, and then for all of them.

Click on cell **D4**.

The content line displays the formula that computes the amount to be billed. You have just indicated which cell will contain the result of the operation of rounding. To indicate which cells are to be affected by the formula you can either type their names or click them.

Type **+ROUND(B4\*C4;2)**

Before confirming this formula with  check to make sure there are no mistakes. If there are, correct them using .

Item	Price	Quantity	Amount
PEARS	\$1.48	5.12	7.5776
APPLES	\$1.28	6.14	7.8592
ORANGES	\$1.18	11	12.98
GRAPES	\$1.50	13	19.50
Subtotal			42.9268
Sales tax			2.9608
Total w/tax			45.8876

Cell D4 has been operated on by the formula, and now contains 4.39. But this time the result is not merely visual, the value of the amount in D4 has really been changed.



As you see, there is no dollar sign, because the cell has not been formatted.

#### NOTE

The **[+]** sign indicates that you are entering a formula, the word "ROUND" says what the function is.

The parentheses indicate the beginning and end of the formula which the function ROUND operates on.

The semicolon (;) followed by 2, indicates that the digit to be rounded off is the second digit after the decimal point.

Pressing **[return]** indicates that the formula is complete.

You have just told Mouse Calc to round off a value to two decimal places. By changing the number after the semicolon you can round off to one or more places.

## REPEATING A FORMULA

You can avoid retyping the rounding formula by making it apply to a group of cells.

You do this by telling Mouse Calc to copy the formula used for cell D4. (D4 should still be selected. If it's not, click on D4 now.)

Select *Copy* in the *Edit* menu.

#### NOTE

Selecting the **Copy** command allows you to copy the contents of one or more cells of your spreadsheet. It doesn't matter whether the information involved is text, numbers, or a formula.

Indicate which cells are to be treated by the formula.

Select the range **D5 ... D7**.

Now that you have selected a range, you have to tell Mouse Calc to repeat the formula so that you can change the cell names given in the formula.

Select *Paste Adjusting* in the *Edit* menu.

When you release the button you will see a question on the work line: Paste adjusting S = SAME R = RELATIVE D4: D5.D7+ROUND(B4\*C4;2). You must respond before Mouse Calc can continue. You can answer using either the mouse or the keyboard. To use the keyboard, you just need to type the letter "S" or "R". To answer using the mouse, you will need to click on the word SAME or on the word RELATIVE. You will have to answer once for each cell contained in the formula.

File Edit Print Function Format Graph Calculate Link Info									
D5.D7		Value: SUM(B5:C7)							
Paste adjusting		S = SAME R = RELATIVE		D4:D5.D7+ROUND(B4*C4;2)					
BILL									
Item	Price	Quantity	Amount						
PEARS	1.49	3.13	\$4.38						
APPLES	1.78	3.13	\$5.47						
GRAPES	1.50	1.33	\$1.99						
Subtotal			42.1376						
Sales tax			2.95						
Total w/ tax			45.0876						

Typing an "S" or clicking on SAME tells Mouse Calc to copy the formula without changing the cell that the cursor is on. Typing an "R" or clicking on RELATIVE tells Mouse Calc to change the cell name that the cursor is on in the formula to the same relative cell in the row (or column) that you are copying the formula to.

Since the formula as now written applies only to cells B4 and C4, and you want it to apply as well to the corresponding cells in rows 5, 6, and 7, you should click on RELATIVE twice. You have to do this twice because there are two cell names in the formula. This tells Mouse Calc to apply the same rounding formula it applied in row 4 to the next two rows, 5 and 6, replacing the cells of columns B and C by those directly below them each time: the calculation will be "relative" to the row being worked on.

Click on the word RELATIVE in the work line.

Click on the word RELATIVE in the work line.

Now the Amount column has 4.39 in D4, 6.15 in D5, 12.1 in D6, and 19.5 in D7. This is as it was before. But now the value of the subtotal in D12 is different: 42.14. The phantom penny has been found!

#### NOTE

*You selected the option **Paste adjusting** in the **Edit** menu. This command allows you to transpose information which is contained in one or more cells. It can only be used after you have selected the command **Copy**.*

To check whether the rounding formula has really been converted by Mouse Calc, pick one of the cells which contain the result of the operation.

Click on cell **D5**.

As you see, the content line reads `+ROUND(B5*C5;2)`, so the formula has indeed been converted for row 5. If you check, you will see that the same is true for the other rows.

## ROUNDING OFF THE SALES TAX

When you select the option *Normal* in the *Format* menu the amount of the sales tax in cell D13 is given to the sixth decimal place. To round off this value to the nearest cent, you must retype the rounding formula, since the formula used to calculate the tax is not the same as the formula used to calculate the other totals.

We want to write the tax computing formula to round off the amount, so we will begin by indicating which cell is the one that will show the result of the computation.

Click on cell **D13**.

Now, to indicate that the formula is to be applied to the amount given in cell D12, you can either type "D12" or click on cell D12 when it appears in the formula.

Type `+ROUND(D12*7/100;2)` return

When you press return, the amount of the tax is given in D13 rounded off to the nearest cent: 2.95.

Now all the values in the Amount column can be varied at will. If you change the quantity or the price of an item, its amount will automatically be recalculated and rounded off to the nearest cent. The sales tax and the total with tax will also be recomputed, as you can see if you play around a bit.

## **ANOTHER FORMATTING PROBLEM**

The operation that you have just carried out eliminated the dollar signs in the amount column. What if we want to put them back in? We can do this with a command from the *Format* menu which you used earlier.

First tell Mouse Calc which cells are to receive the dollar sign.

Select range **D4 ... D15**.

Now specify which format you want.

Select, \$X,XXX.XX in the *Format* menu.

When you release the button all the amounts will be preceded by a dollar sign. Now the bill has been prepared in the standard fashion.

## **SAVING THE SPREADSHEET**

By now, saving your spreadsheets has almost become a habit; try to save "FINAL.BILL" without looking at the instructions below. They are there in case you need help.

Select *Save* in the *File* menu.

When you release the button, Mouse Calc will ask you if you want to erase the file previously saved under the same name. On the work line you see the words `Replace existing file? (Yes/No):`.

As usual, you can answer using the mouse or the keyboard. Answer yes using the mouse.

Click on `Yes`.

You have just saved "FINAL.BILL". Mouse Calc recorded it on your disk over the previous version.

***In this lesson you have learned:***

- how to enter a formula that rounds off values
- how to do this for a range
- how to use the *Copy* command in the *Edit* menu
- how to use the *Paste adjusting* command in the *Edit* menu.



## 6. BUILDING A SALES FORECAST SPREADSHEET

In forecasting product sales, you find that you are always manipulating the sales figures for the different months, the different product mixes and the different sales regions. Often this manipulation process occurs many times before you reach your desired results. The question is, how can you do this in the most efficient way? You want to have a way of changing the figures without having to spend hours at an adding machine. Then there is always the possibility of missing one number. Let us see how we can make this process easier.

### ***What you will do in this lesson:***

The main purpose of lesson 6 is to familiarize you with creating an entire working spreadsheet with a practical application. For the most part, you will be using commands in the *Edit* menu such as *Cut*, *Copy*, *Paste*, *Insert a row*, *Column width*, *Edit cell* and *Set/clear grid*. When creating this new spreadsheet, you will start by using the *New* command from the *File* menu. You will learn how to set up a spreadsheet by placing headings and inputting sales information in the various cells. You will also use the *Fill cell* command from the *Format* menu and discover different methods of moving around the spreadsheet using the "elevators" and the commands **control**–**B** and **control**–**E**. Lastly, the lesson will teach you how to split your screen into two parts to see more information.

### CREATING THE SALES FORECAST SPREADSHEET

In earlier lessons, you learned how to name a file using the *Name* command in the *Info* menu. This option is used mainly when you are working with a spreadsheet that has already been saved and you want to change it without deleting your old copy. When you are beginning a new spreadsheet, you should use the *New* command in the *File* menu.

Select *New* in the *File* menu.



If there is any information on your screen, the message *Save this file? (Yes/No):* will appear on the work line. Press "N" to erase the spreadsheet on the screen. Now, a message will appear on the work line that will ask you to type the name of your new file. Give it the name "FORECAST", and don't forget to press **return** when you're finished.

Type **FORECAST** **return**

Now you can begin constructing your new spreadsheet. The layout of the spreadsheet will be the sales forecasts for three regions divided into four quarters. The first step is to type the title of the spreadsheet and each of the column names in your "Sales Forecast" spreadsheet. First, start with the title.

Click on **B2**, then type **Bear Compressor Co.** **return**

As you can see, cell *B2* only shows *Bear Compre*, the first 11 characters of what you typed. The column needs to be wider to show all of the information. There are two methods of changing the size of a column. The first method uses the mouse pointer. Place the pointer on the left side of the vertical bar which separates the column headings "B" and "C". Hold the mouse button down and the bar should begin to blink. Now move the bar to the next vertical bar on the right and release the button.

Use the mouse pointer to widen column B.

The second method uses the "Column width" command from the *Edit* menu. First you must select the column, then select *Column width* in the *Edit* menu. Once you have made the selection, you will be prompted for the column size on the work line. Enter a number from 0 to 40 to change the size of the column and reformat the spreadsheet.

Click on **A1** and select *Column width* in *Edit* menu.

When *Column width:* appears on the work line type **5** **return**

#### NOTE

*The minimum column width is zero and the maximum is 40. Choosing zero will remove a column from the screen but all of the formulas will remain. You can also use your mouse to change the width of a column, but a column cannot be deleted using the mouse.*

Now you will notice that there is a nice margin at the top and on the left side of the spreadsheet. This makes your spreadsheet easier to read. Let's continue entering the title and column names.

Click on **B3**, then type **Sales Forecast – 1985** return

Click on **B5**, then type **Region** return

Click on **C5**, then type **Quarter 1** return

Click on **D5**, then type **Quarter 2** (but do not press return)

Try pressing tab for quicker entry. Pressing tab advances the highlighted cell to the next column.

Press tab, then type **Quarter 3** tab

Type **Quarter 4** tab

You will notice that the screen has “scrolled” to the left. It does this whenever you try to move to a cell located beyond the screen area.

The last column is named “1985 Total”, but because it begins with a number it is assumed to be a value and not text. Entering a quotation mark (") before you type the number will tell the cell to accept whatever you type as text.

In cell G5 type " (notice **Text :** appears on the work line).

Now type **1985 Total** return

To get back to cell A1, simply press control and the letter “B” at the same time. This tells Mouse Calc that you want to go back to the (B)eginning of the spreadsheet.




Press control–**B**

#### NOTE

control–**B** (both keys pressed at the same time) signals that you want to get back to the (B)eginning of your spreadsheet.

control–**E** signals that you want to go to the (E)nd or lower right cell of the spreadsheet. This is a very quick and simple way to get from one end of your spreadsheet to the other: don't forget that you have a total of 16,200 cells available!

Let's put the minus sign "-" (or hyphen) in the sixth row of the spreadsheet. Its function will be to separate the headings from the rows containing the forecast information. You must begin with a quotation mark to let Mouse Calc know that you are not entering a value.

Click on cell **B6**, then type   

It would be tedious to have to repeat the character "-" for the whole length of the row, but this is not necessary, since Mouse Calc provides commands called *Fill cell* and *Copy* that do the job automatically. You must now indicate that the hyphen is the character to be used to fill in cell B6.

Select *Fill cell* in the *Format* menu.

Now cell B6 is filled, but we want to fill the cells to the right as well.

#### NOTE

The **Fill cell** command in the **Format** menu repeats any character for the length of a cell. The character can be a letter, a period, or anything else, but you can only use one character in a given cell.

Select *Copy* in the *Edit* menu.

Now you have to say where you want this filled cell to be copied. When you learned how to make a bill, you learned how to select a range located in a column. The approach is the same when you want to specify a range located in a row: you place the pointer in the first cell (C6) and then drag it as far as you want (G6). When this range is lit, release the button.

Select range **C6 ... G6**.

The content line now displays the names of the cells bounding the range you selected: C6 . . G6. This indicates which cells are to be affected. The next thing to do is to indicate that you want to *Paste* the filled cell that you copied from B6 into all the designated cells.

Select *Paste* in the *Edit* menu.

Now the hyphens should extend along the whole length of row 6.

#### NOTE

The **Paste** command in the **Edit** menu puts the information contained in a cell where you tell it to. This command is always used after **Copy** or **Cut** in the **Edit** menu.

Now that you have created your own dividers, you may want to remove Mouse Calc's grid. Try selecting *Set/clear grid* from the **Edit** menu. To put back the grid, just select *Set/clear grid* again.

## TAKING THE ELEVATOR

You used **control**–**B** to get to the first column of the spreadsheet, but there is another quick and easy way to get around your spreadsheet.

When you click the mouse in different columns of the spreadsheet, you may have noticed that the small lit rectangle located in the lower left hand corner of the screen moves along simultaneously. This is one of the “elevators” used for moving about the spreadsheet. Mouse Calc provides two elevators, one horizontal and one vertical.

The elevator located on the line at the bottom of the screen can be used to move horizontally through the spreadsheet. The elevator located on the right side of the screen allows you to move vertically through the spreadsheet.

Now you'll use the horizontal elevator to get back to column A of the grid. Position the pointer so that it covers the horizontal elevator at the bottom of the screen. Then press the mouse button and hold it down. The rectangle will begin to blink. Keep the button pressed down while you move the mouse to the left. When the rectangle is back at the beginning of the line, release the button. Play with the elevators to move to different positions in the spreadsheet.

Move the bottom **elevator box** to the lower left corner.

## ENTERING AND MODIFYING FORECAST INFORMATION

Now you can begin making entries in your Sales Forecast spreadsheet.

Click on **B7**, then type **Western** return

Click on **B8**, then type **Eastern** return

Click on **B9**, then type **Southern** return

We can enter each of the region's first quarter forecasts.

Click on **C7**, then type **110** return

Click on **C8**, then type **160** return

Click on **C9**, then type **140** return

Each of the regions has a different planned growth rate. Since the Western region is the newest region, it is expected to grow 20% a quarter, whereas the older regions expect 10% and 5% growth, respectively.

This is a reasonable expectation for the regions, but what will the figures look like? Let Mouse Calc plan the growth for you. Here is how it is done. Choose the cell for the growth formula, go to the *Function* menu and select +. This tells Mouse Calc that you are entering a value.

Click on cell **D7**.

Select + in the *Function* menu.

Click on cell **C7**.

When you do this you will notice that cell C7 flashed for only a moment and the work line now shows *Value: +C7*. The next step is to enter the multiplier.

Select \* in the *Function* menu.

Type **.20** (this is the 20% growth).

Select *Enter* in the *Function* menu.

Cell D7 shows the result 22. This is in fact the growth, but what we wanted to show is the forecast. The formula should have included the figure 1.20, not .20. Instead of retyping the formula, you can use the *Edit cell* command in the *Edit* menu to correct the formula.



Select *Edit cell* in the *Edit* menu.

The words *Edit Value: +C7\*.2* will appear on the work line. You can use the arrow keys on your keyboard to move the cursor to the point where you want to insert the

change, then type 1.

Press  4 times.

Type **1** 

If you make a mistake, use  to erase the error. Once you have pressed , the result of the formula will change the cell value.

#### NOTE

*The **Edit cell** command in the **Edit** menu allows you to correct any information typed in a cell without having to erase and retype the whole contents of the cell, as you did in earlier lessons.*

Now you can enter the formulas for the next two regions with the growth rates of 10% and 5%, respectively.

Click on **D8**, then select + in the *Function* menu.

Click on **C8**, then select \* in the *Function* menu.

Type **1.1** 

Click on **D9**, then select + in the *Function* menu.

Click on **C9**, then select \* in the *Function* menu.

Type **1.05** 

You have now set the growth rate for each of the regions, but this only covers the first and second quarters. There is an easier way to put these same formulas in quarters three and four. You can use the *Copy* and *Paste adjusting* commands to move these formulas and at the same time refer to the correct cells. The first step is to highlight the "source" cells (those with the formulas) and *Copy* them. Then *Paste adjust* those cells to the new area.

Select the range **D7** through **D9**.

Select *Copy* in the *Edit* menu.

Select the block **E7** through **F9**.

Select *Paste adjusting* in the *Edit* menu.

Once you select the *Paste adjusting* command, the work line shows *Paste adjusting: S =Same R =Relative D7:E7.F9 +C7\*1.2*. Mouse Calc is asking you if the new formulas should reference the original cell, C7 (S =Same), or the first cell to the left (R =Relative). You will want the new formula to reference the first cell on the left of



the formula. To do this, click on the word **RELATIVE**. Once you do this, the next row's formula will appear on the work line and the results of the last calculation appear in quarters three and four.

Click on **RELATIVE**.

Click on **RELATIVE**.

Click on **RELATIVE**.

Notice how each of the cells has increased by the appropriate percentage. You might also notice how the numbers take different forms. To make all the numbers appear in the same format, select the "block" of cells C7 through G9. Then select *Decimal places* in the *Format* menu and type 1. Although there is nothing yet entered in column G, you can select a format for it now so that the numbers you type into in later will be in the same format as the others.

Select the block **C7 ... G9**.

Select *Decimal places* in the *Format* menu.

Type **1**

To complete the spreadsheet, you need to add all of the quarters into the "1985 Total" column. This operation can be easily accomplished using the function *SUM*.

Click on **G7**.

Select the *Sum* command in the *Function* menu.

Select the range **C7 ... F7**.

Select **)** in the *Function* menu.

Select *Enter* in the *Function* menu.

Cell G7 now shows the total for the Western region. Now you need to perform the same operation for the Eastern and Southern regions. Use the *Copy* and *Paste adjusting* method you learned earlier.

Click on **G7**.

Select *Copy* in the *Edit* menu.

Select the range **G8 ... G9**.

Select *Paste adjusting* in the *Edit* menu.

Click on the word **RELATIVE** on the work line 2 times.

## OPENING A WINDOW OR SPLITTING YOUR SCREEN

As you can see, you cannot look at the totals and the region names at the same time because there is not enough room on the screen. Mouse Calc allows you to split your screen either horizontally or vertically to see different parts of the spreadsheet. This is called **opening a window**.

To open a window, first place the pointer on the **window box** in the lower right hand corner of your screen, as you did for the elevators when you wanted to move around the screen. Hold down the mouse button, move the window box halfway up the side of the screen, then release the mouse button. As you will see, the spreadsheet has been divided into two parts. You can now select any of the cells in either window. Changing information in one window will change it in the other.


Move the **window box** halfway up the screen.

After you open a window you have FOUR elevators on the screen. Each window has a vertical elevator (in the upper right hand corner of the window) and a horizontal elevator (in the lower left hand corner).

You can also open a vertical window by moving the window box in the lower right corner to the left. Either kind of window can be any size you choose. To "close" a window, use the pointer to move the window box back to its starting point in the lower right hand corner.


Move the **window box** from the bottom right to the left until it's halfway across the screen.

Click on cell **C1** in the right window.

Press - to move a half screen to the right.

Now you can see the "Regions" column and the "1985 Total" column at the same time.

### NOTE

*Pressing  at the same time as any of the arrow keys lets you move one half screen at a time instead of one cell at a time.*

Now close the window before beginning the next section.

Move the **window box** back to the lower right corner.

## INSERTING A ROW OR COLUMN

Sometimes, new information must be added to a spreadsheet. For example, Bear Compressor Co. has just added a new sales region (the Central region). This new region needs to be added below the Western region. Now you will see how to do this without re-typing the entire spreadsheet or changing the structure of the spreadsheet as you have it on your screen. You will use the *Insert a row* command in the *Edit* menu. To insert a row, you must first highlight the cell below where you want to insert the new row, then select *Insert a row* from the *Edit* menu.

Click on **B8**.

Select *Insert a row* in the *Edit* menu.

When you release the button, Mouse Calc will insert an extra row.

Now type **Central**

Format the range **C8 ... G8**, setting *Decimal places* to 1.

Click on cell **C8**, then type **80**

The Central region expects a 25% growth rate. Next you will use the same type of formulas created above to fill this row.

Click on cell **D8**, then type **+D7\*1.25**

Select *Copy* from the *Edit* menu.

Select the range **E8 ... F8**, then select *Paste adjusting*.

Click on the word **RELATIVE**.

Click on **G8**, then select *Sum* in the *Function* menu.

Select the range **C8 ... F8**, then press

Press

You have now added new information to your spreadsheet without having to retype the whole spreadsheet.

## SAVING YOUR FORECAST SPREADSHEET

It is important to get into the habit of systematically saving the file you are working on as you go along, even before it is finished. The more frequently you do this, the more you are protected against accidents that could lose valuable data.

Now let's save the new file, "FORECAST", on the SAMPLES disk.

Select *Select volume* in the *File* menu.

Click on **SAMPLES**.

Select *Save* in the *File* menu.

If this is the first time you have saved this file, Mouse Calc will display the words *Saving file* on the work line. If you have already saved the file while you were doing the lesson, Mouse Calc will ask you on the work line whether it should *Replace existing file? (Yes/No):*.

Click on **Yes**.

Once you have done this, Mouse Calc will begin saving the file. Wait until the red light goes off before you take the disk out of the drive.

### ***In this lesson you have learned:***

- how to use the commands *Cut*, *Copy*, and *Paste* in the *Edit* menu
- how to *Insert a row* into an existing spreadsheet
- how to use *Column width* to widen or narrow a column
- how to use *Edit cell* to change the contents of a cell
- how to remove and replace the grid using *Set/clear grid*
- how to use the *Fill cell* command from the *Format* menu
- how to move around the spreadsheet using the "elevators" and the commands **control-B** and **control-E**
- how to split your screen into two parts to see more information.

## 7. GRAPHING YOUR SALES FORECAST

Now that you have built a solid forecast, you will surely want to use it in making important business decisions and in your presentation to the board of directors. Mouse Calc's graphing capability allows you to analyze information in a way that most spreadsheets don't – visually.

### ***What you will do in this lesson:***

You will define your graphs by naming the ranges which you want to graph. You will use Mouse Calc's windowing capability to divide your screen into two parts – one which will contain cells and one which will contain the graph. You will learn how to use the many different types of graphs in Mouse Calc.

### ***NAMING A RANGE***

In earlier lessons, you learned how to select a range in order to add up its contents. Now you will select a range in order to give it a name so that Mouse Calc knows to graph it. The *Name a range* command is in the *Calculate* menu. Before selecting the command you must select the range you want to name. You can name up to eight ranges. This will give you eight levels in your graph. For now, let's start with just one to see how it works.

Since you want to see the trends in each region and compare them to each other, you will want to put all of the information for a particular region in one range. Start with the Western Region.

Select the range **C7 ... F7**.

Now select *Name a range* in the *Calculate* menu.

The work line will prompt you for the name of the range. The eight possible names are CHART1 through CHART8. Let's start with CHART1.

Type **CHART1**

To see the graph you will need to open a window for it. You will want to open a horizontal window. To do this place the pointer on the window box in the lower right hand corner, hold down the button, and slide the mouse upward until the window box is a little more than halfway up the right side of the screen.

Open a horizontal window.

As you can see, both windows are filled with cells. In order to make one of the windows into a graph, you will need to use the command *Cells-Graph* in the *Graph* menu. Do this now.

Select *Cells-Graph* in the *Graph* menu.

The graph you see contains only three bars, but you know that there are four sales quarters in your spreadsheet, and you selected all four of these in the range you named CHART1. Also notice that the lowest number along the vertical axis of the graph is 110. This also happens to be the lowest number in the Western region's sales for 1985. Mouse Calc uses the lowest number in your range (CHART1) as its axis point unless you specify otherwise. Let's do that now.

To tell Mouse Calc that you want to change the highest and lowest point in your graph you will need to name a range called ZERO, then tell Mouse Calc to recalculate the graph's parameters. This will give Mouse Calc the highest and lowest numbers to appear on your graph. The two numbers should be in adjacent cells anywhere on your spreadsheet so they can become a range. We'll use 0 as the low and 200 as the high.

Click on **C13**, then type **0**

Click on **C14**, then type **200**

Now name the range ZERO and tell it to recalculate using the *Calculate now!* command in the *Calculate* menu.

Select range **C13 ... C14**.

Select *Name a range* from the *Calculate* menu.

Type **ZERO**

Select *Calculate now!* from the *Calculate* menu.



Now, the fourth bar is present on your graph and the numbers along the vertical axis have changed.

As you learned earlier, you can move around the spreadsheet independently in either window. To make the best use of the top window, make sure that the sales forecasts for all four regions in all four quarters are visible in the top window. Do this using the elevators and arrows.

Move the sales forecast numbers into view.

Now you can see clearly how the numbers for the Western region compare to the graph. The numbers for each quarter correspond to the bars which are numbered along the horizontal axis of the graph. Now it's time to add the other regions to your graph so you can compare them.

## **MULTIPLE GRAPHS**

To add more regions to the graph you need to name each one you want to graph. As mentioned earlier, the names of the ranges must be CHART1 through CHART8. Begin by naming the Eastern region's forecasts CHART2. Then name the Central region's CHART3, and the Southern region's CHART4.

Select range **C8 ... F8**.

Select *Name a range* from the *Calculate* menu.

Type **CHART2**

Do the same for the last two regions.

You have probably noticed that the graph has not changed. Use the *Calculate now!* command to update the graph.

Select *Calculate now!* from the *Calculate* menu.

Quickly the graph is updated and now contains all of the regions' sales side by side. They are layered with CHART1 being in front and CHART2 behind it, continuing to the back with the last chart named. As you can see, the sales in the Central region (the second row of bars, CHART2) began low in the first quarter because it is a new region. But looking to the right at quarter 4 you will also see that due to your excellent new sales plan, which you will present to the board, sales in the Central region will climb quickly.

## NOTE

*Although you defined the highest number in your graph as 200 in the ZERO range, Mouse Calc knows that it's not the largest number it needs to draw the graph, so it changes the highest number along the vertical axis automatically.*

## CHANGING YOUR GRAPH

Since different people work better with different types of information, Mouse Calc allows you to view your graph in many different ways. Currently, there is a standard bar graph on your screen.

Another way to look at bar graphs is 3-dimensionally. You can use the *3 Dimensional* command in the *Graph* menu to change this graph to 3-D.

Select *3 Dimensional* in the *Graph* menu.

The graph will automatically change to 3-D. Another type of graph is a "line" graph in which all of the numbers within a range are connected to each other with lines. Many people like this type of graph because it clearly shows the directions of change. Try this now.

Select *Connected lines* from the *Graph* menu.

The graph is now a series of connected lines. Each region has its own line with a graphic character at each quarter point so that you can tell them apart. You can find out which line is associated with each region by comparing them with the numbers on the spreadsheet.

## NOTE

*When you first learned about windows, you were told that they could be either horizontal or vertical. The same holds true when you are displaying a graph. To see a graph in a vertical window you must first close the horizontal window.*

You can experiment with each of the different graph types and find which one you like best. In fact, you will probably find that the type of graph you use will depend on the contents of your spreadsheet. Different information will lend itself to a different graph.

## SAVING YOUR FORECAST SPREADSHEET

Now let's save the spreadsheet you've been working on: FORECAST.

Select *Save* in the *File* menu.

Since you already saved this spreadsheet at the end of lesson 6, Mouse Calc will ask you whether it should `Replace existing file? (Yes/No):`.

Click on *Yes*.

Mouse Calc will begin saving the file. Wait until the red light goes off before you take the disk out of the drive.

If you have done all of the lessons in the Tutorial, you now know how to build your own complex spreadsheets and how to graph them in a variety of ways. There are still many more things that Mouse Calc can do which you have not yet learned! These items are described in detail in the Reference manual. The Tutorial is intended to get you started creating your own spreadsheets – but it's just the beginning. As you work with Mouse Calc, consult the Reference manual to learn more about the numerous functions it provides.

### ***In this Tutorial, you have learned:***

- how to create a spreadsheet
- how to use the command *Fill cell* in the *Format* menu
- how to move using `control`–**B** and `control`–**E**
- how to use the horizontal and vertical elevators
- how to make a column wider or narrower with the *Column width* command in the *Edit* menu and with the mouse
- how to use the *Set/clear grid* command in the *Edit* menu
- how to enter numerical data as if it were text
- how to correct entries with the *Edit cell* command in the *Edit* menu
- how to open a horizontal or vertical window
- how to use the *Insert a row* and *Insert a column* commands in the *Edit* menu
- how to name a range to build a graph
- how to graph your spreadsheet as bars or lines.

# *REFERENCE MANUAL*

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# ABOUT THIS MANUAL

This manual introduces you to the finer points of Mouse Calc, the combined spreadsheet and graphics, mouse-driven software package. You should use this manual as a reference guide. It is a tool that you can pick up at any time to help you with rarely used functions or to re-familiarize yourself if you have not used Mouse Calc for a while.

We suggest that before you begin reading the Reference manual, you should first read the Mouse Calc Tutorial to get comfortable with the basic workings of Mouse Calc. Once you have completed the Tutorial, you should read the Mouse Calc Reference manual to study the more in-depth functions of Mouse Calc.

Do not expect to master all of the functions during your first sitting. You should grow with the product. As you master certain skills, you can use the Reference manual to learn new functions. The Reference manual has been structured to allow for this type of easy reference.

The reference manual has been organized into chapters which represent each of the "Menus" in the Menu bar (i.e., Chapter 2 - File, Chapter 3 - Edit, etc.). Within each chapter, the menu heading's general concept is discussed (what does the *File* menu do, etc.) followed by a detailed explanation of all of the items within that menu and their functions.

There are many aspects and functions of Mouse Calc that you will not find in other spreadsheet programs. Two very unique aspects of Mouse Calc are its use of the mouse for moving about the screen, and its ability to display and print graphs created from your spreadsheets. To learn more about these functions in particular, you should read the following chapters:

- Chapter 3 - Edit
- Chapter 5 - Function
- Chapter 7 - Graph
- Chapter 8 - Calculate

To find out more about the function of the Apple II operating system, read Apple's ProDOS User's manual.

# 1. GETTING STARTED

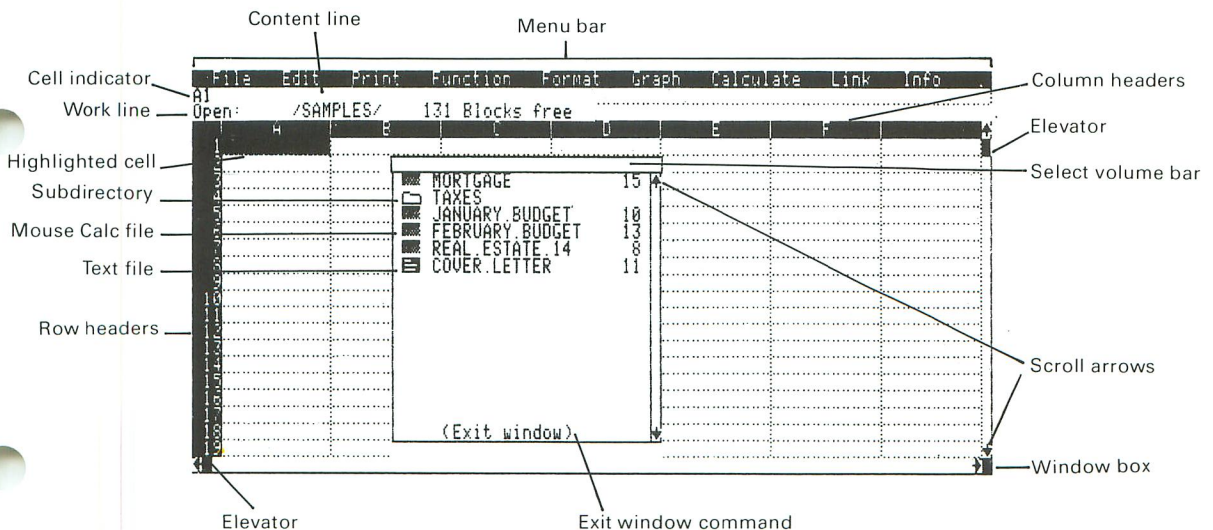
This chapter reviews many of the things you learned in the Mouse Calc Tutorial. It summarizes what you need to know to use Mouse Calc – the important areas of the screen, moving throughout your spreadsheet, and how to get help from the manual or from Mouse Calc itself. It all happens with a few basic techniques. You simply move the mouse and click the mouse button. This means that there are far fewer keystrokes to type, and therefore, far fewer cryptic commands to memorize and type.

## NOTE

*If you have done the Mouse Calc Tutorial, you should already be familiar with the Apple Mouse. If you have never used a mouse before, you should take out the "MousePaint" disk you received in your Apple Mouse package and do the Tutorial program. Once you are familiar with the mouse, you will be well on the way to mastering Mouse Calc.*

## THE IMPORTANT AREAS OF THE SCREEN

There are many important functions and areas located on the Mouse Calc screen. To help you become more familiar with these, we have illustrated a common Mouse Calc screen pointing out each of the important areas.





The activity on the screen can be broken down into four categories: the information and data entry area, the cells of the spreadsheet, the windows, and basic movement throughout the spreadsheet.

## ***THE INFORMATION AND ENTRY AREA***

The information and entry area is located on the top three lines of the screen. This is the area where all of the menu functions and status remarks about specific cells within the spreadsheet are located.

**Menu bar** - The most important feature on the screen. It contains all of the menus for Mouse Calc. When you click the mouse on one of the names on the menu bar, all of the functions available under that menu will be visible ("Pull-down menu").

**Cell indicator** - This area shows the coordinates of the highlighted area within the spreadsheet.

**Content line** - To the right of the cell indicator is the content line. This area shows the type of cell (Text or Value) and the contents of that cell.

**Work line** - The work line is where all keyboard input is displayed.

## ***WORKING AREA***

The working area includes the **row headings** (far left side) and **column headings** (the fourth line down) and all of the **cells**. For example, the **highlighted cell** at "A1" is part of the working area. If you look at the cell indicator on line 2, you can find the coordinates "A1" which correspond to the highlighted cell. The working area on the screen represents only a window, or portion of your total Mouse Calc spreadsheet. You might visualize the working area of your spreadsheet as if you were looking at your spreadsheet through a magnifying glass. The working area is where all of your calculations are completed and where all of your facts and figures appear.

## ON – SCREEN WINDOWS

When using certain functions, a window may appear in the middle of your screen as shown in the picture on the previous page. A typical window can be described as follows. The small bar along the top of the window allows you to switch from the current volume (or prefix) to other volumes. This is the **select volume bar**. Below this bar is the list of files available on your disk. The files listed are organized with an identifier “icon”, the file name, and the size of the file. There are three types of icons:

 **File Folder** - A subdirectory

 **Spreadsheet** - A Mouse Calc file

 **Memo** - Standard text file

The last area of the screen window is a line reading [Exit window]. By clicking the mouse on these words, you tell Mouse Calc that you have completed the command and the window is no longer needed.

## BASIC MOVEMENT COMMANDS

This section shows you how to use the mouse or the keyboard to perform movements **within the window area** and how to **move the entire window** to other parts of the spreadsheet. The most important movement device is the **mouse**, which is represented on the screen by the **pointer** (shaped like an arrow - see screen). Whenever you move the mouse, the pointer on the screen will move correspondingly.

### *Movements within the window area*



Clicking the mouse in a specific location will highlight a cell or produce a menu of options. You may also “drag” the mouse by holding down the mouse button and moving the mouse. This is useful when highlighting a block of cells or moving down a list of menu items. When you release the button while highlighting cells, they will be ready for action. When you release the mouse button while on a menu item, that command will be performed.

You can move from one cell to another by pressing the arrow keys on the lower right hand side of your keyboard or clicking on the **arrow icon** in the **elevator** as shown on the screen.

## *Moving the entire window*

Remember that what you see on the screen is only a portion of the entire spreadsheet area available to you. The total spreadsheet itself has 254 rows and 63 columns. Therefore, in order to see the entire spreadsheet on the screen, you would need a very large screen or very small characters. That is why we say that the screen represents only a window of your spreadsheet.

You can use several functions to move the screen to another area of your spreadsheet. Simple movement to the next cell of the spreadsheet in any direction can be accomplished by using either the arrow keys on the keyboard or by clicking the arrow icons in the elevators. If you are highlighting cells that extend beyond the current screen, you may drag the mouse pointer to the edge of the screen and Mouse Calc will scroll the screen until you reach the desired location.

To move more than one cell at a time, there are several “jump” type commands. Typing **(control)-[B]** or **(control)-[E]** allows you to move to the beginning or end of your spreadsheet. (Remember to press **(control)** and the letter at the same time.) To scroll through your spreadsheet you can slide the **elevator box** along the side or along the bottom of the screen, or you can press  while pressing one of the arrow keys or while clicking on one of the arrow icons. The functions using  allow you to move one half-screen at a time.

There are also times when you want to go to a specific cell in your spreadsheet. By pressing the “greater than” sign (**>**), the work line will say **Cell coordinates:**. When you type C25, the screen will shift and the highlighted cell will be C25. This is called the **GOTO** function.




## *Splitting screens*

There might be times when you want to see two different portions of your spreadsheet. This is simple enough. Just move the mouse pointer down to the bottom right corner to the **window box**. Click and drag the box either up the side of the screen or along the bottom to the left. When you release the button, a second window will appear where you left the window box.

Another feature of this split screen function is that it allows you to display your graph in the second window. You can find out more about this function in chapters 7 and 8.

## ■ ***Help and Escape***

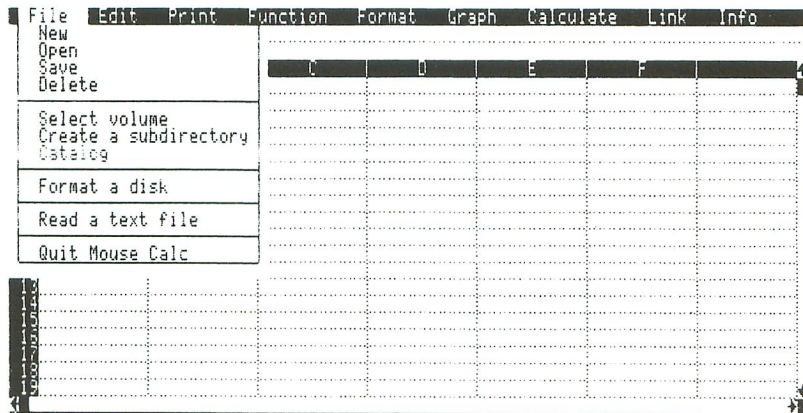
There are two “global” Mouse Calc functions that can be accessed at any time: **Help** and **Escape**. The *Help* function allows you to get “on-line” guidance for all of the menu functions simply by going to the *Info* menu and selecting *Help*. This is covered in chapter 10.

Pressing  will allow you to “cancel” any function you have selected. For example, if you select the *Open* command, then press , you will return to your spreadsheet. Clicking the mouse outside of the currently active window on the screen will have the same effect as pressing .



## 2. FILE

The *File* menu contains the commands you need to work on your files and your disks. It allows you to format disks and create subdirectories, and to load and save your Mouse Calc files. The file menu contains commands which help you manage the files which you store on your disks.



## CREATING A NEW SPREADSHEET

**MENU:** File

**COMMAND:** New

### Definition :

This command is used to name a new spreadsheet.

### What to do:

Select the *New* command. The message *Name of new file:* will appear on the third line of the screen (the work line). Now type in the name of the new file. The name can have up to 15 characters including letters, numbers, periods and blank spaces. It doesn't matter whether letters are entered in upper or lower case. All filenames must start with a letter. Any spaces in the new filename will be converted to periods. Then press .

### Examples of allowable filenames:

BILL  
BILL.TAX  
Grid 23  
B.125.X.AT.  
Phone Bill

### NOTE

*Once you have finished working on a file and wish to put it away, select **Save** in the **File** menu. Also, Mouse Calc will ask you if you want to save your current file before you create a new file or open an existing file.*

*You can change the name of the file you are working on at any time by using the command **Name** in the **Info** menu.*

### See:

*Save* in the *File* menu.  
*Name* in the *Info* menu.



## OPENING AN EXISTING FILE

**MENU:** File

**COMMAND:** Open

### Definition:

This command is used to load an existing file from a disk into memory.

### What to do:

Select the *Open* command. The message *Open:* will appear on the third line of the screen (the work line) along with the name of the Volume and the number of blocks currently free. A window will appear on the screen with a list of the files (Mouse Calc files as well as others) recorded on the volume. Each name is followed by the number of blocks the file occupies on the disk. To open a particular Mouse Calc file, click on the spreadsheet icon or the name of the file. The file will be loaded into memory and appear on the screen.

### Example:

The work line reads:

*Open:* /SAMPLES/ 101 Blocks Free.

This means that the active volume called SAMPLES currently has 101 blocks available. Move the mouse to the filename "SAMPLE.GRAPH" and click.

### NOTE

*If a spreadsheet is on the screen, Mouse Calc will ask you if you want to save the spreadsheet before it loads in a new one.*

*If the message File Error or Error volume not found → Click please appears, click the mouse button. Then select the command **Select volume** in the **File** menu.*

*To open a file in a subdirectory, click on the name of the subdirectory (or the file folder icon) and a window will appear with all the files in that subdirectory. Click on the appropriate file.*

### See:

*Save* in the *File* menu.

*Select volume* in the *File* menu.

*Catalog* in the *File* menu.

## SAVING A FILE

**MENU:** File

**COMMAND:** Save

### Definition:

This command allows you to save a file onto a disk.

### What to do:

Select the *Save* command. The message *Saving file* will appear on the third line (the work line) to indicate that your file is being saved to disk.

If the file already exists on disk, Mouse Calc will ask you if you would like to *Replace existing file? (Yes/No):*. There are two possible answers: Y for Yes, or N for No. If you type "Y", the old file will be permanently erased and the new file stored in its place. If you type "N", the old file will **not** be erased and the new file will **not** be saved. If you want to keep the old file and also save the new one, then you must give the new file a different name by using the *Name* command. Any file that you save can be loaded in exactly as it was saved. You may also click the mouse on either the *Yes* or *No* on the work line.

When the cursor begins to blink again on the work line, the file has been saved. Wait until the "Save" is finished and the disk stops turning before you take the disk from the drive.

### NOTE

*For a file to be saved it must have a name. If it does not have a name, use the command **Name** in the **Info** menu before saving the file.*

*You can use  to cancel this command.*

### See:

*Name* in the *Info* menu.

## DELETING A FILE

**MENU:** File

**COMMAND:** Delete

### Definition:

This command is used to delete a file from a disk.

### What to do:

Select the *Delete* command. The command name **Delete:** followed by the name of the current volume and the number of blocks free appears on the work line. The list of files appears in a window on the screen. Click the name of the file you want to delete, for example "BANKSHEET". The message **Delete BANKSHEET? (Yes/No)** appears and requires an answer.

Clicking on **Yes** will complete the deletion and clicking on **No** will cancel it. You may also type "Y" for Yes, and "N" for No as an alternative.

### NOTE

*When you delete a file from a disk, it is gone for good! If you press  before you answer, or if you answer "No", the command is cancelled.*

## SELECT VOLUME

**MENU:** File

**COMMAND:** Select Volume

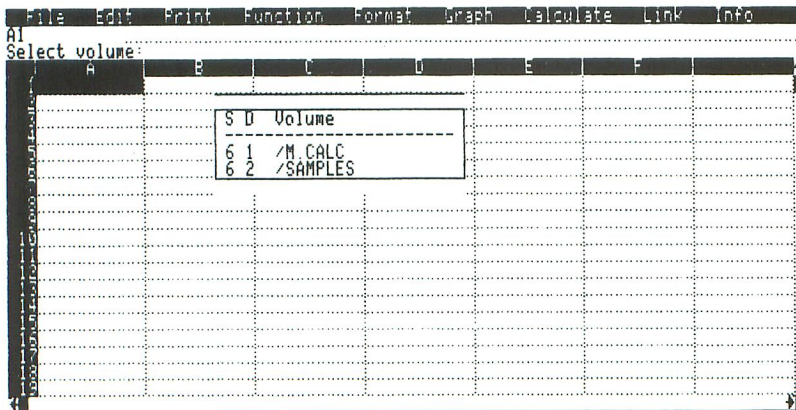
### Definition:

This command is used to choose the active volume. It also allows you to find out the names of all the disks currently in the disk drives.

### What to do:

Select the *Select volume* command. A window will open up and display the names of the volumes available. Clicking the name of a volume in the window makes that volume the active one. Every time you change a disk you must use this command so that Mouse Calc will recognize the new disk.

The numbers below the letters "S" and "D" in the window indicate the Slot and Drive of each volume.



### NOTE

Only one volume can be active at a time. To cancel the command, click outside the window or press **ESC**.

### See:

Open in the File menu.

## CREATING A SUBDIRECTORY

**MENU:** File

**COMMAND:** Create a subdirectory

### Definition:

The list of files in a volume is called the *catalog*. The *Create a subdirectory* command is used to subdivide the disk into logical sections. For example, you may have a disk that contains budgets for each of the departments in a company. By creating subdirectories such as "Manufacturing", "Sales" and "Distribution", you can organize your files logically. It is like opening up a file cabinet with file folders (subdirectories) making information easier to find.

### What to do:

Select the *Create a subdirectory* command. The words `Create subdirectory:` will appear on the work line. You must type in a name for the subdirectory.

The number of files you can fit on a disk depends on how big the individual files are. The size of a Mouse Calc file can vary from 6 to 100 blocks. A disk contains 273 blocks.

### Example:

The name of a subdirectory may consist of letters, numbers, or periods, and must begin with a letter. It may not contain a space.

#### NOTE

*In the catalog, all subdirectories are preceded by the file folder symbol. Subdirectories can include subdirectories, but you cannot delete a subdirectory from your disk using Mouse Calc. You must use a ProDOS utility disk.*

Pressing `esc` cancels this command.

### See:

The Apple ProDOS manuals.



## CATALOG

**MENU:** File

**COMMAND:** Catalog

### Definition:

This is the command used to display the names of all of the files and subdirectories on a disk.

### What to do:

Select the *Catalog* command. The word *Catalog:* will appear on the work line, followed by the name of the volume and the number of blocks still available. The Catalog window can display up to 15 filenames, followed by the size of the file. If the catalog has more than 15 filenames, you can read the remaining names by clicking the arrow symbol in the lower right hand corner of the window. To cancel this command, click on (Exit window) at the bottom of the window.

### NOTE

*The catalog is also displayed when you select **Open** or **Delete** in the **File** menu.*

### See:

*Open* in the *File* menu.  
"Catalog and Select volume" (next page).



## CATALOG AND SELECT VOLUME

**MENU:** File

**COMMAND:** Catalog

### Definition:

This command allows you to view the contents in the current prefix and also lets you switch "active volumes" or subdirectories easily.

### What to do:

Select the *Catalog* command. This will show you a catalog of the current prefix. Clicking in the top bar of the *Catalog* window (the select volume bar) will show you the *Select volume* window, which contains the name of all of the disks in your system.

If you are showing the catalog of a subdirectory, clicking in the top bar will take you up one level to where you originally chose the subdirectory name, rather than showing you the select volume window.

### NOTE

*Performing this operation allows you to change the active disk when you have more than one disk drive or use subdirectories. You can follow the same procedure after selecting the **Open** option in the **File** menu. A subdirectory can contain another subdirectory that contains another subdirectory, etc. To get out of this option click (Exit window).*

### See:

*Select volume* in the *File* menu.

*Catalog* in the *File* menu.

*Open* in the *File* menu.

## FORMATTING A DISK

**MENU:** File

**COMMAND:** Format a disk

### Definition:

This command is used to format and name a new blank disk or get rid of the files on an old one. It should be used with caution, since formatting a disk will permanently erase anything that was previously stored on it.

### What to do:

Select the *Format a disk* command.

Be sure to do **everything** that the work line tells you to do.

If your program disk is not in your disk drive Mouse Calc will ask you to *Insert Mouse Calc disk*. Put the Mouse Calc disk into the drive and press `return`. Press `caps lock` in the lower left corner of your keyboard to the down position. The work line will then display *Format with what name:*. Type in the name you want to give to the disk (e.g. DATA) and press `return`.

Mouse Calc now asks you where the disk is that you want to format. The work line displays:

*Format disk in Drive (1 or 2):*

Choose which drive you want to use to format your disk in by typing "1" or "2". If you only have one drive, type "1". The work line will now display:

*Insert blank disk and press F*

Be sure to remove your program disk from the drive. Carefully place your blank diskette in the drive you selected and press "F".

A sound will indicate that the disk is being formatted.

### NOTE

*Before you type F, check the disk one last time to make sure that it is the one you want to format; if you format the wrong disk, you will erase everything on it. On an Apple IIc, drive 1 refers to the built-in drive and drive 2 is the external drive.*

## READING A TEXT FILE

**MENU:** File

**COMMAND:** Read a text file

### Definition:

This command is only used to read text files that have been previously saved to disk.

### What to do:

Select the *Read a text file* command. A window will appear with the catalog from the active volume. Click the name of the text file you would like to see. These are marked with the memo icon. The text will begin scrolling up the screen. Press the space bar to stop the scrolling of the text. When you want the scrolling to continue, press space again. To get back to Mouse Calc, press esc.

### NOTE

*Names of text files are preceded by memo icons. Text files are usually created with a word processing program such as Version Soft's "Mouse Write". Using Mouse Calc you can read up to 3000 characters of a text file.*

### See:

*Catalog* in the *File* menu.  
*Help* in the *Info* menu.

## QUITTING MOUSE CALC

**MENU:** File

**COMMAND:** Quit Mouse Calc

### Definition:

Use this command when you have finished working with Mouse Calc.

### What to do:

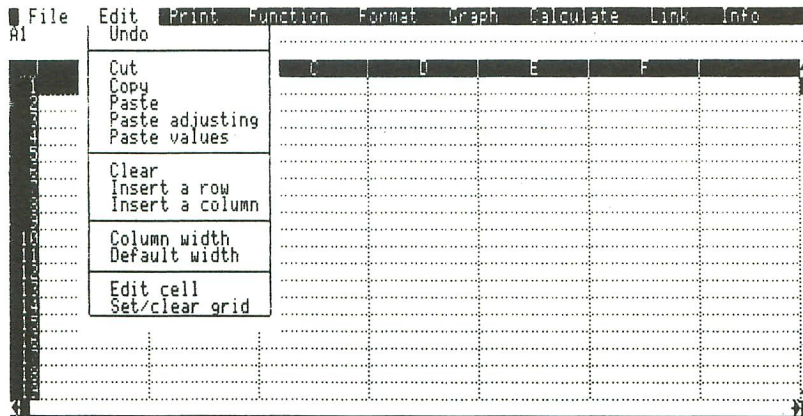
Select the *Quit Mouse Calc* command. If you are working on a file when you select this option, Mouse Calc will ask you if you want to save it. To answer yes, type "Y", to answer no, type "N". You may also use the mouse and click on either Yes or No.

### NOTE

Normally you will want to save a file you are working on by using the command **Save** in the **File** menu.

### 3. EDIT

The *Edit* menu contains most of the commands you use to “edit” or change information which you have already entered in your spreadsheet. It also allows you to duplicate information in one part of your spreadsheet and add it somewhere else in your spreadsheet or in a different spreadsheet altogether. Or, if you’d like, you can simply move the information quickly and easily using the mouse.



## UNDOING AN EDIT COMMAND

**MENU:** Edit

**COMMAND:** Undo

### Definition:

This command is used to cancel any unwanted command you have selected while using the *Edit* menu.

### What to do:

If you make a mistake or change your mind, *Undo* gets you back to where you were just before that last *Edit* operation was performed. This command functions for the following operations:

*Cut* in the *Edit* menu

*Copy* in the *Edit* menu

*Clear* in the *Edit* menu

### Example:

Suppose you enter something into cell A3 and then select the command *Cut* for cell A3. When you do this, what is in the cell will disappear from the screen. However, suppose you then decide that getting rid of the material was a mistake: you want it back. When you select *Undo* you will get it back: the command “undoes” what you just did.

### NOTE

*This command only applies to the **last** operation performed. You can not undo a **Cut** once you have performed another operation such as clicking on another cell.*

### See:

*Cut* in the *Edit* menu.

*Paste* in the *Edit* menu.

*Clear* in the *Edit* menu.



## CUTTING CELLS

**MENU:** Edit

**COMMAND:** Cut

### Definition:

This command is used to move the contents of one or more cells on to an imaginary "clipboard". The *Cut* command will store the contents on this "clipboard" until you want to *Paste* them somewhere else in your file. You can also "carry" the contents of the clipboard from one file to another.

### What to do:

Click on the cell you want to cut. You can select a block of adjacent cells as well. Select the *Cut* command. The contents of the cells you selected will disappear. You will then want to use one of the three *Paste* commands described on the following pages.

### Examples:

You can cut one or more cells if the group consists of:

- cells in the same row, e.g. A3 ... E3
- cells in the same column, e.g. B5 ... B12
- adjacent cells, e.g. B13 ... F18
- a row, e.g. A1 ... BK1: to do this, click on the row number
- a column, e.g. D1 ... D254: to do this, click on the column name
- more than one row, e.g. A3 ... BK6: drag down the row numbers
- more than one column, e.g. D1 ... F254: drag across the column names.

### NOTE

*Be careful not to confuse the **Cut** command with the **Clear** command. When you **Cut** a cell, the contents go to the "clipboard" so you can paste its contents somewhere else. When you **Clear** a cell, everything it contained is gone for good.*

### See:

*Paste* in the *Edit* menu.  
*Paste adjusting* in the *Edit* menu.  
*Paste values* in the *Edit* menu.  
*Clear* in the *Edit* menu.

## CUTTING A ROW OR COLUMN

**MENU:** Edit

**COMMAND:** Cut

### **Definition:**

This specific operation involves cutting a whole row or column out of a spreadsheet.

### **What to do:**

Click the letter heading in the column or the number in the row you wish to *Cut*. When you do this, the entire column or row will be highlighted. Now go to the *Edit* menu and select *Cut*. The entire column or row will disappear and the spreadsheet will reorganize itself.

### **Example:**

Suppose that:

cell A1 contains 1  
cell B1 contains 2  
cell C1 contains 3  
cell D1 contains 4

Click on column B. All the visible cells of column B light up. Now select *Cut*. Everything in the cells of column B disappears, and the spreadsheet is reorganized so that:

cell A1 contains 1  
cell B1 contains 3  
cell C1 contains 4

The original column B is gone, and the contents of each column on the right are moved one column to the left. You can use *Paste* to put the *Cut* column somewhere else because all of the contents are contained on the clipboard.

### **NOTE**

*If you make a mistake when **Cutting** a row or column, you can correct it as follows: insert a new column, using the **Insert a column** command at the point where you eliminated the original row or column. Once the new column is inserted, click on the first cell of the new column. Select the **Paste** command from the **Edit** menu. The old column will reappear where it was with all of its contents intact. You can perform the same operations for a row or rows, or for more than one column.*

### **See:**

*Paste* in the *Edit* menu.

*Insert a row* in the *Edit* menu.

*Insert a column* in the *Edit* menu.

## COPYING CELLS

**MENU:** Edit  
**COMMAND:** Copy

### Definition:

This command is used to copy the contents of one or more cells on to an imaginary "clipboard" while the original contents remain in the cells. The *Copy* command will store the contents on this "clipboard" until you want to "paste" them somewhere else on your spreadsheet. You can also "carry" the contents of the clipboard from one file to another.

### What to do:

Select the cell or cells you want to copy to the clipboard. Select the *Copy* command. A copy of the contents of all the cells chosen is copied to the clipboard, but the original contents remain visible in the cells. You will then want to use one of the three *Paste* commands described on the following pages.

### Examples:

It is possible to copy a single cell or a block of cells such as:

- cells in the same row, e.g. A3 ... E3
- cells in the same column, e.g. B5 ... B12
- adjacent cells, e.g. B13 ... F18
- a whole row, by clicking on the row number
- a whole column, by clicking on the column name
- more than one row, by dragging down the row numbers
- more than one column, by dragging across the column names.

### NOTE

You should use **Copy** if you want to **Paste** the contents of one or more cells elsewhere in the spreadsheet without eliminating the original cell's information.

### See:

*Paste* in the *Edit* menu.  
*Paste adjusting* in the *Edit* menu.  
*Paste values* in the *Edit* menu.

## PASTING CELLS

**MENU:** Edit

**COMMAND:** Paste

### Definition:

This command is used to *Paste* the contents of one or more cells from the “clipboard” onto the spreadsheet after they have been *Cut* or *Copied*.

### What to do:

Select the cell or cells where you want to place the contents of the clipboard. Select the *Paste* command. The material from the “clipboard” is reproduced in the cell or cells you selected.

### Example:

Suppose cell A3 contains  $+A1+1$ . Click this cell.  
Select the *Cut* command in the *Edit* menu.  
Click cell B8.  
Select the *Paste* command.  
The contents of cell A3, both the formula and the result, are now in B8.

### NOTE

*You may paste a single cell into a block of cells, in which case Mouse Calc fills the entire block with that value. You may also paste an entire block of cells into an area whose upper left corner is a single cell. You may get unexpected results if these areas overlap.*

### See:

*Paste adjusting* in the *Edit* menu.  
*Paste values* in the *Edit* menu.  
*Cut* in the *Edit* menu.  
*Copy* in the *Edit* menu.



## PASTE ADJUSTING

**MENU:** Edit

**COMMAND:** Paste adjusting

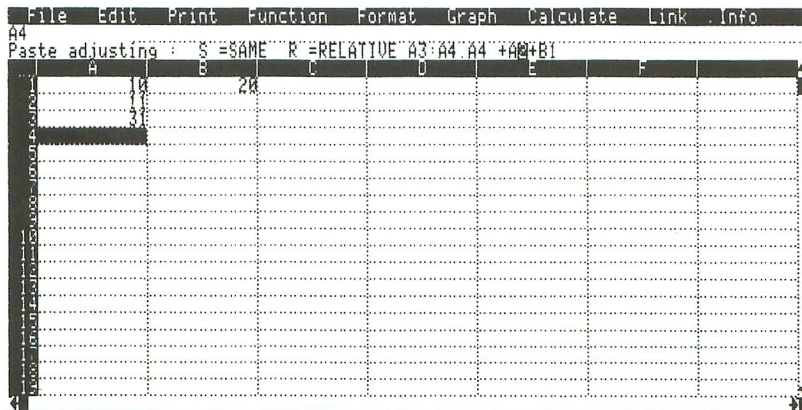
### Definition:

*Paste adjusting* is very similar to the standard *Paste* command. The difference in *Paste adjusting* is that the formulas are *converted* to reflect the new location of the cells. To use *Paste adjusting* the cells must have been *Copied* or *Cut* first.

### What to do:

Once you have *Cut* or *Copied* a cell or cells to the “invisible clipboard”, you should click on the new cell you want the clipboard information to go to. Now select *Paste adjusting* in the *Edit* menu. Mouse Calc will display this message on the work line:

```
Paste adjusting  S=SAME R=RELATIVE
A3:A4.A4 +A2+B1
```



For every cell formula that contains a cell reference (i.e., +A2+B1), you will be asked if that formula should be kept the **Same** or be **Relative**. To be **Relative** means that a cell reference will depend on the relative positions of the cell

which the formula was copied from and the cell in the formula itself. For example, if the cell you copied from (A3) references the cell above it (A2), you have the choice of having the new pasted cell formula reference the **Same** cell (A2) or reference the **Relative** cell, the one above the new cell.

The work line will prompt you for each reference. The format for the message on the work line is: the name of the first copied cell, the name of the cell or cells being pasted to, and finally, the formula that is to be modified. The cursor will be located on each cell reference in the formula. Mouse Calc will wait for your choice. If you type "S" (for SAME) or click the mouse on **SAME** in the work line, then that particular cell reference is not changed when the formula is copied. If you type "R" (for RELATIVE) or click on **RELATIVE**, then the cell reference the cursor is on will be converted. The result of the calculation made with the converted formula will be displayed in the cell pasted to.

### **Example:**

Cell A3 contains the formula `+A2+B1`. Click cell A3.

Select the *Copy* command in the *File* menu.

Click cell A4.

Select the *Paste adjusting* command. When you release the button, the work line displays:

```
Paste adjusting S =SAME R = RELATIVE
A3:A4.A4 +A2+B1
```

The cursor is located on the first cell reference in the formula (A2).

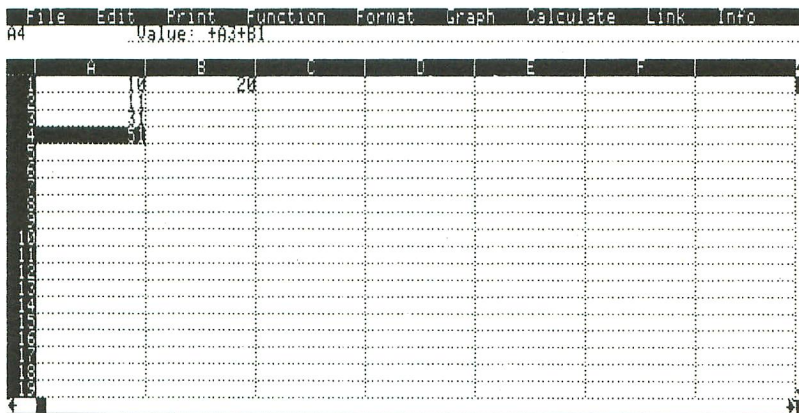
Click on **RELATIVE**: the cell name A2 will become A3 in the converted formula.

Now the cursor is located on the second cell name in the formula (B1).

Click on **SAME**: the cell name does not change; it is still B1 in the converted formula.

Now cell A4 contains the converted formula `+A3+B1`.





The above screen illustrates how the formula has been modified.

#### NOTE

*This is one of the most important commands in Mouse Calc, since it is so powerful. The range you copy from and the range you paste to can be of different sizes. Modification is possible for each formula involved. Mouse Calc will convert each variable in your formula as often as necessary to fill the range you ask it to paste to.*

#### See:

- Paste in the Edit menu.*
- Paste values in the Edit menu.*
- Cut in the Edit menu.*
- Copy in the Edit menu.*

## PASTE VALUES

**MENU:** Edit

**COMMAND:** Paste values

### Definition:

After a *Cut* or *Copy*, you may wish to *Paste* only the values and not the formulas. Therefore, the value of a cell can be moved from the "clipboard" without moving the formula.

### What to do:

Once you have information on your clipboard, click on the new cell to be pasted to. Select the *Paste values* command. Only the values which were previously cut or copied are reproduced in the cells pasted to.

### Example:

Cell A3 contains the number 5.

Cell A4 contains the formula  $+A3+1$ , and displays the number 6.

Select cells A3 and A4.

Select the *Copy* command.

Click cell B3, the cell to be pasted to.

Select the *Paste values* command.

The values of A3 and A4 are copied to cells B3 and B4, respectively.

Cell B3 displays 5, and cell B4 displays 6.

The formula in B4 has disappeared; only the value has been pasted.

### NOTE

The **Paste value** command does not transfer formulas, only values. The range copied from and the range pasted to can be of different sizes. Mouse Calc will paste only the values of the first range, and will continue to paste them as many times as necessary to fill the second range.

### See:

*Paste adjusting* in the *Edit* menu.

*Paste* in the *Edit* menu.

*Cut* in the *Edit* menu.

*Copy* in the *Edit* menu.

## **CLEARING A CELL**

**MENU:** Edit

**COMMAND:** Clear

### **Definition:**

This command is used to erase all of the contents of a cell or cells.

### **What to do:**

Click the cell or cells you want to erase. Then select the *Clear* command.

### **NOTE**

*Do not confuse this command and the **Cut** command. **Clear** eliminates the material in the affected cells, while **Cut** removes the contents but stores it on an invisible "clipboard" so that it can be pasted elsewhere. When you clear the contents of a row or a column, the cells are emptied but there is no reorganization of the spreadsheet: the cells remain as they were. If you clear by mistake, select the **Undo** command.*

### **See:**

*Undo* in the *Edit* menu.

## INSERTING A ROW

**MENU:** Edit

**COMMAND:** Insert a row

### Definition:

This command is used to insert a new row into a spreadsheet.

### What to do:

Click on any cell in the row situated below the point where you want the new row to appear. Select the *Insert a row* command. A new row will be inserted. All rows below that row will move down one step. All the formulas in the spreadsheet with cell references are converted with reference to the new cell positions.

### Example:

Cell A1 contains the number 10.  
Cell A2 contains  $+A1+1$  and displays the value 11.  
Cell A3 contains  $+A2+2$  and displays 13.  
Click **A2** then select the *Insert a row* command.  
When the button is released, the spreadsheet reorganizes:  
Cell A1 contains 10.  
Cell A2 is empty.  
Cell A3 contains  $+A1+1$  and displays 11.  
Cell A4 contains  $+A3+2$  and displays 13.  
The formula in cell A4 has been automatically converted.

#### NOTE

To remove a row inserted by mistake you must use the **Cut** command in the **Edit** menu.

### See:

*Cut* in the *Edit* menu.

## INSERTING A COLUMN

**MENU:** Edit

**COMMAND:** Insert a column

### Definition:

This command is used to insert a new column in a spreadsheet.

### What to do:

Click any cell in the column situated to the right of where you want the inserted column to appear. Select the *Insert a column* command. An empty column will be inserted. Every column to the right of that row will move one step to the right. All the formulas in the spreadsheet with cell references are converted in terms of the new cell positions.

### Example:

Cell A1 contains 2.

Cell B1 contains  $+A1+5$  and displays 7.

Cell C1 contains  $+B1+10$  and displays 17.

Click cell **B1**, then select the *Insert a column* command.

Cell A1 contains 2.

Cell B1 is empty.

Cell C1 contains  $+A1+5$  and displays 7.

Cell D1 contains  $+C1+10$  and displays 17.

The formula in cell D1 has been automatically converted.

### NOTE

To remove a column inserted by mistake you must use the **Cut** command in the **Edit** menu.

### See:

*Cut* in the *Edit* menu.



## MOVING A ROW OR COLUMN

### Definition:

This command allows you to move an entire row or column to another position in the spreadsheet. This operation involves using a combination of commands.

### What to do:

Choose the location where you want the new column to appear and select *Insert a column*. The new column will appear at the cursor's position. *Copy* the column you want to move. Now click on the new column and choose *Paste adjusting*. Once the new column contains all of the data, *Cut* the column in the former location.

### Example:

Suppose you want to move column A between columns C and D. Begin by typing an A in A1, a B in B1, etc., up to E1.

Click any cell in column D, for example **D1**.

Select the *Insert a column* command in the *Edit* menu.

Column D and every column to its right are moved one step to the right and a new column D is inserted.

Click the letter **A**, the heading of the A column.

Select the *Copy* command in the *Edit* menu.

Click cell **D1**.

Select the *Paste adjusting* command in the *Edit* menu.

The former column A is now located at D.

Select the column A by clicking the letter **A**.

Select the *Cut* command in the *Edit* menu.

Column A has been removed, and the spreadsheet has been reorganized to the left.

The letter B is now in column A, C in column B, and A is in column C.

### NOTE

You can perform the same operations to move a row. You can also move an adjacent block of columns or rows in one operation. To do this you must insert as many columns (or rows) in the chosen location as there are columns or rows to be moved. Depending on what you want the final result to be, you can also use the commands **Paste values** or **Paste**.

### See:

*Insert a row* in the *Edit* menu.

*Insert a column* in the *Edit* menu.

*Cut* in the *Edit* menu.

*Paste* in the *Edit* menu.

*Paste adjusting* in the *Edit* menu.

*Paste values* in the *Edit* menu.



## CHANGING THE WIDTH OF A COLUMN

**MENU:** Edit

**COMMAND:** Column width

### Definition:

This command is used to change the width of a column.

### What to do:

Click a cell in the column you want to change.

Select the *Column width* command.

The work line displays *Column width:*.

Type in the desired width (0 to 40 characters), then press

.

The spreadsheet will reformat.

### NOTE

*Some results may not be displayed normally because of a lack of space, but that does not change their value. It is possible to simultaneously change the width of more than one column, as long as they are next to each other, by clicking them together. When a column is assigned the width 0 it disappears from the screen, but the values and formulas that it contains are still active. To bring a column whose width is 0 back to the screen, you have to click the two columns surrounding it simultaneously and change the widths of all three together. By typing the letter "D" instead of a number for the width, you will set the width to the default value.*

### See:

*Default width* in the *Edit* menu.

## CHANGING THE WIDTH OF A COLUMN, PART II

### **Definition:**

Column width can also be changed by using the mouse.

### **What to do:**

Position the pointer in the column heading, immediately to the left of the vertical line marking the right boundary of the column you want to change. Press down the mouse button and hold it: the vertical line will begin to flicker. Move this line until the column has the desired width. Once you release the button, the grid will reform.

### **NOTE**

*With this operation, the minimum column width is one character and the maximum is 40.*

### **See:**

*Column width* in the *Edit* menu.

## CHANGING THE DEFAULT WIDTH

**MENU:** Edit

**COMMAND:** Default width

### Definition:

This command is used to change the normal width of a column. The default value assigned by Mouse Calc is 11 characters, but this command allows you to set another default value.

### What to do:

Select the *Default width* command. The work line will display the words *Column width:*. Type in the desired width, which can be any number from 1 to 40, then press return. The spreadsheet will reorganize to conform to the new value.

### NOTE

*Some results may not be normally displayed for lack of column space, but that does not affect their value. If the width of a column has been changed by an operation on that column, that width will not be affected.*

### See:

*Column width* in the *Edit* menu.

## EDITING A CELL

**MENU:** Edit

**COMMAND:** Edit cell

### Definition:

This command is used to change a formula or text in a cell without having to completely retype it.

### What to do:

Click the cell you want to edit. Select the *Edit cell* command. The work line will display *Edit Value:* or *Edit Text:*, depending on what the cell contains, and the contents of that cell. Use the arrow keys to move the cursor within the text. Pressing delete will delete a character to the left of the cursor. The characters you type will be inserted at the location of the cursor. To signal that you have finished editing the cell contents, press return.

### Example:

Cell A1 contains the text ABCDE.  
Click cell **A1**.  
Select the *Edit cell* command.  
The work line displays *Edit Text:* ABCDE.  
Press → twice.  
Now the cursor is on the character C.  
Press delete, and the letter E will disappear.  
Type **XY** and press return.  
These characters will be inserted to the right of A, and A1 now reads AXYCDE.

### NOTE

*Use this command to correct a formula, a number, or text.*

## REMOVING THE GRID

**MENU:** Edit

**COMMAND:** Set/clear grid

### Definition:

This command operates as a toggle switch to remove and replace the dotted lines marking off the columns and rows.

### What to do:

Select the *Set/clear grid* command.

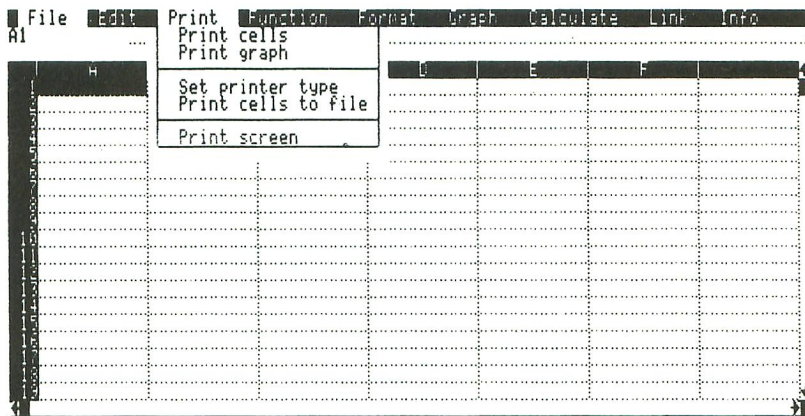
The dotted lines will disappear, but nothing else is affected.

Select the *Set/clear grid* command again.

Now the spreadsheet appears in its original form.

## 4. PRINT

The *Print* menu is used to tell Mouse Calc which printer you are using and what the printer's characteristics should be. The different commands also let you print all or part of your file, or simply print a copy of exactly what appears on the screen.





## PRINTING CELLS

**MENU:** Print

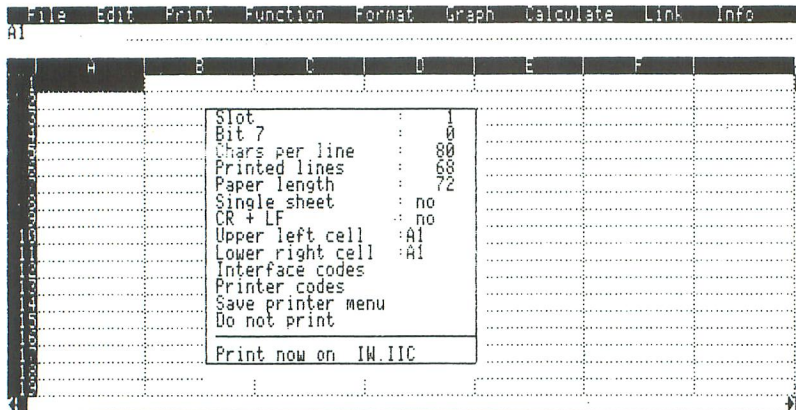
**COMMAND:** Print cells

### Definition:

This command is used to print a file.

### What to do:

Put the Mouse Calc disk in the disk drive; select the *Print cells* command. A window will open with the various printer options. To change any option, click on its name in the window.



1. **Slot** – The default is **1** to correspond to the position of the printer interface card in slot 1 on the Apple IIe. **Slot 1** also refers to **Port 1** on the Apple IIc.
2. **Bit 7** – Data is sent to the printer in groups of 8 bits numbered from 0 to 7. Some printers, for instance Epson and Canon, require that bit 7 always be zero. Therefore, the default value is **0**.
3. **Chars per line** – The number of characters in a line; default is **80**.

4. **Printed lines** – The number of lines printed on a page; the default is **58 lines**.
5. **Paper length** – The actual size of the sheet of paper, in number of lines. This default is set at **66 lines** per page.
6. **Single sheet** – This allows you to choose between continuous printing or stopping the printer after each sheet is printed. The default is set at **no**.
7. **CR + LF** – Certain combinations of printer and interface card require that the carriage return and the line feed commands be sent by the computer at the end of each line. The default value **no** means that only a carriage return is sent. Set it to **yes** if the printer “over-prints” lines. Set it to **no** if the printer doublespaces lines.
8. **Upper left cell** – This shows the coordinates of the **upper left cell** to be printed. Normally this will be **A1**. The default is the upper left cell in your spreadsheet. If a range is selected when the command is selected, the first and the last cells to be printed are the first and last cells of the range.
9. **Lower right cell** – This shows the coordinates of the last cell to be printed. The default is the **lower right cell** of your spreadsheet, but it can be manually changed. This will be different for almost every file.
10. **Interface codes** – This feature allows the printer interface card to be initialized. A series of commands must be typed to tell the interface: not to display characters on screen (DISABLE ECHO), not to intercept characters (ZAP MODE), or (TRANSPARENT MODE) to adjust the transmission speed for a particular printer. The default is blank. After selecting this option, there will be a prompt on the work line. Type the codes you wish to enter and click the mouse button when you are through.
11. **Printer codes** – This feature allows the printer to be initialized. A series of commands must be typed to tell the printer: what size of character to used, what the spacing is, etc. The default is blank. This is how you send control codes to the printer. After selecting this option, there will be a prompt on the work line. Type the codes you wish to enter and click the mouse button when you are through.
12. **Save printer menu** – If you modify any of the default settings, you may wish to *Save printer menu* so you will not have to change the settings each time you print.

13. **Exit window** – This is used to exit the *Print cells* option without printing the spreadsheet.
14. **Print now on IW.IIC** – This command starts the printing of the file on the specified printer, IW.IIC (the ImageWriter driver for the Apple IIc).

**NOTE**

*If you want to print out the formulas of your spreadsheet, first select **Show formulas** in the **Calculate** menu, then select **Print cells**.*

## PRINTING GRAPHS

**MENU:** Print

**COMMAND:** Print graph

### Definition:

This command is used to print graphics created from the spreadsheet. The graph must be visible on the screen in order to print it.

### What to do:

Define a graph for your spreadsheet using appropriate range names. Then open a window and select *Cells-Graph* to display the graph. Then select the *Print graph* command.

### NOTE

*If you have not yet defined a graph, the command will not work (see chapter 7 – Graph for details). With the Apple dot matrix printers and Epsoms you have the choice of printing normal or double size images. The double size has a "2" in the filename. Prior to printing, you must select the graphics printer you are using with the **Set printer type** command. The double size printers are located on your SAMPLES disk in the subdirectory PRINTER.*

### See:

*Set printer type* in the *Print* menu.  
*Print cells* in the *Print* menu.

## SETTING THE PRINTER TYPE

**MENU:** Print

**COMMAND:** Set printer type

### Definition:

This command is used to set the printer type for printing.

### What to do:

Put the Mouse Calc disk in the disk drive. Select the *Set printer type* command.

A window will open giving the available printer types. Not all of the printers will appear in the window. If you want to use a printer type that is not on your Mouse Calc disk, you will have to delete one of the printer files from the subdirectory PRINTER on your Mouse Calc program disk, and then copy the new printer file from the subdirectory PRINTER on the SAMPLES disk to the subdirectory PRINTER on the Mouse Calc program disk. Use your ProDOS User's Disk or System Utilities IIc to do this.

IW.IIE	Apple ImageWriter with Apple IIe (normal graphics)
IW.2.IIE	Apple ImageWriter with Apple IIe (double size graphics)
IW.IIC	Apple ImageWriter with Apple IIc (normal graphics)
IW.2.IIC	Apple ImageWriter with Apple IIc (double size graphics)
EPSON	Epson dot matrix printer (normal graphics)
EPSON.2	Epson dot matrix printer (double size graphics)
P.EPSON	Epson parallel printer (normal graphics)
P.EPSON.2	Epson parallel printer (double size graphics)
LQP	Apple Daisy Wheel Printer
CANON	Canon matrix printer compatible with Epson

When you click on the name of the printer you are using, the disk drive will begin turning. When it stops, Mouse Calc will have changed the current printer selection. In order to save the current selection, you must open up the printer options window by selecting *Print cells* and selecting *Save printer menu*.

### See:

*Print cells* in the *Print* menu.

## SAVING YOUR SPREADSHEET AS AN ASCII FILE

*MENU:* Print

*COMMAND:* Print cells to file

### Definition:

This command is used to save your spreadsheet to disk in a form that can be used by other software programs. This may occur when you wish to use the result of your calculations in a memo written on a word processor such as Mouse Write. The spreadsheet is saved as an ASCII text file and will save only values, not formulas.

### What to do:

Select the *Print cells to file* command. A window will open giving relevant printer features. Change the values in Upper left cell and Lower right cell to the appropriate coordinates. Click on *Print now on DISK*. The work line will ask for the *Name of new file:* for the file being created. The disk drive will then save the new file on the disk.

### See:

*Print cells* in the *Print* menu.



## ***PRINTING EVERYTHING ON THE SCREEN***

**MENU:** Print

**COMMAND:** Print screen

### ***Definition:***

This command is used to print a copy of exactly what is displayed on the screen.

### ***What to do:***

Make sure you have selected the proper printer and that it is properly configured by opening the printer options window. This is done by selecting *Print cells*. Then select the *Print screen* command.

### **NOTE**

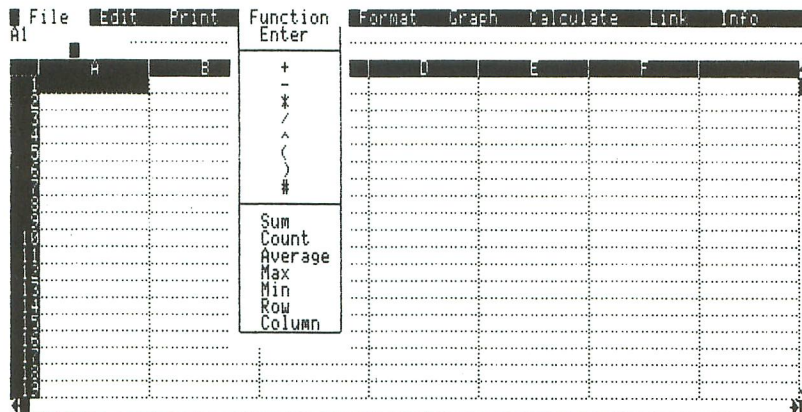
*Two print sizes are available with the Apple ImageWriter printer.*

### ***See:***

*Set printer type* in the *Edit* menu.

## 5. FUNCTION

The *Function* menu contains the most commonly used arithmetic symbols and functions used in writing formulas. You can use the mouse to select these functions and the cells that they will apply to, so that you can write formulas quickly and easily without having to use the keyboard.




## ENTERING A FORMULA

**MENU:** Function

**COMMAND:** Enter


### Definition:

This command is used to signal that a cell formula is complete and to enter it in a cell. It has the same effect as  but it allows you to use the mouse.

### What to do:

Complete a formula and select the *Enter* command.

#### NOTE

*This command has exactly the same effect as pressing  at the end of a formula. **Enter** is useful because you do not need to switch from the mouse to the keyboard after ending a formula.*

## OPERATIONS

**MENU:** Function

**OPERATIONS:** +

–

\*

/

### Definition:

These menu options are used to enter operations in formulas without using the keyboard.

### What to do:

Select the specific operation. It will be displayed on the work line for the cell selected.

### Example:

+ indicates addition  
– indicates subtraction  
\* indicates multiplication  
/ indicates division

### NOTE

*Selecting these operations has exactly the same effect as typing them on the keyboard. Which method you use in a particular case depends on what is most convenient at that moment.*

## RAISING A NUMBER

**MENU:** Function

**COMMAND:** ^

### Definition:

This command is used to raise a number exponentially.

### What to do:

Type **5^3** in a cell. This symbolizes the operation of raising 5 to the third power, and corresponds to  $5*5*5$ . The result is displayed as 125.00000028. The decimals are of no significance in this case, and are merely consequences of the calculation method used.

### NOTE

*It is possible to have a fractional exponent. Thus  $3^{0.5}$  yields 1.7320508065, which is the square root of 3. Typing in the sign  $^$  instead of selecting it has exactly the same effect. Raising a negative number with a fractional exponent gives the ERROR message since this is mathematically impossible.*

## USING PARENTHESES IN A FORMULA

**MENU:** Function  
**COMMANDS:** {  
}

### Definition:

Parentheses are used in a formula to specify the order of calculation.

### What to do:

Select ( or ) when writing a formula. Make sure that there is a right parenthesis corresponding to every left parenthesis.

### Example:

A cell that contains  $3*4+5$  will display 17.  
A cell that contains  $3*(4+5)$  will display 27.

In the first formula, first 3 and 4 are multiplied, then the result is added to 5. In the second formula, the parentheses indicate that first 4 and 5 are to be added, and then the result multiplied by 3. When in doubt, use parentheses.

### NOTE

*Even when the parentheses are dispensable, as in the first case, they make a formula easier to read. When correcting a formula it is often quicker to use the **Edit cell** command in the **Edit** menu. The parentheses can also be typed in.*

### See:

*Edit cell* in the *Edit* menu.



## ENTERING A CELL VALUE IN A FORMULA

**MENU:** Function

**COMMAND:** #

### Definition:

This command is used to insert the current value of a cell into a formula.

### Example:

Click on cell A1, then type **11/7** and press return. Cell A1 now contains 1.5714286. Select the # command. The work line will display the value 1.5714285714. It is now possible to use this value in a mathematical formula written on the work line without having to retype the number.

Simply by selecting #, you can transfer the result (value) of any calculation to the work line.

### NOTE

*This command is useful for doing quick calculations. For instance, you can use it to multiply the value of a cell by itself and display the result in the same cell.*

## NUMERICAL FUNCTIONS ON RANGES

**MENU:** Function

**COMMANDS:** Sum  
Count  
Average  
Max  
Min

### Definition:

Range functions are used to calculate values for cells located in the same row or column. To use these functions, you do not need to name the range you want to work with. When entering the formula, refer to the range by its coordinates.

**SUM** : adds up the values of cells in a range.

**COUNT** : counts the non-empty cells of a range.

**AVERAGE** : gives the average value of non-empty cells in a range.

**MAX** : gives the maximum value for all cells of a range.

**MIN** : gives the minimum value for all cells of a range.

### What to do:

Click a cell, for example B1. This is the cell in which the result of the calculation will be displayed. Select one of the commands, for example *Sum*. The work line will display **SUMC**. Select range A1 through A5. The work line will display **SUMC A1 . . . A5**. Now select *Enter* from the *Function* menu. The sum of cells A1 to A5 will be displayed in cell B1.

### Example:

Suppose there are five cells with the following values:

A1 has the value 3

A2 has the value 5

A3 has the value 10

A4 is empty

A5 has the value 0

Now in column B, rows 1 through 5 enter: with results:

SUM	(A1 ... A5)	=	18
COUNT	(A1 ... A5)	=	4
AVERAGE	(A1 ... A5)	=	4.5
MAX	(A1 ... A5)	=	10
MIN	(A1 ... A5)	=	0

### NOTE

*These functions can be combined into complex formulas. They can also be typed from the keyboard, preceded by the  $\oplus$  sign.*

## USING THE ROW OR COLUMN NUMBER

**MENU:** Function

**COMMANDS:** Row  
Column

### Definition:

These functions are used to introduce the row number or column number of a cell into a formula.

### Example:

Click cell **C4**.

Select the *Row* command.

The work line will display **ROW**.

Press **[return]**.

The result displayed is **4**, since cell C4 is in the fourth row.

Click cell **C12**.

Select the *Column* command.

Press **[return]**.

The result displayed is **3**, since cell C12 is in the third column.

### NOTE

The **Row** and **Column** commands can be used in formulas.

## TAKING THE ABSOLUTE VALUE, THE INTEGER VALUE, AND ROUNDING

INTERNAL FUNCTIONS: ABS  
INT  
ROUND

### Definition:

The internal functions are those not listed in the *Function* menu, but available by directly typing them in the formula.

### What they do:

ABS : gives the absolute value of a number.  
INT : gives the integer value of a number.  
ROUND: rounds off a number to the specified number of places.

### Examples:

+ABS(1)	is 1
+ABS(-2)	is 2
+INT(3)	is 3
+INT(4.6)	is 4
+INT(-4)	is -4
+INT(-4.6)	is -4
+ROUND(4.233;2)	is 4.23
+ROUND(4.237;2)	is 4.24
+ROUND(4.237;1)	is 4.2

### NOTE

The internal functions can be specified for names of cells:  
**INT(A3)** takes the integer value of the number in cell A3.  
**ROUND(A5;3)** yields the value, rounded off to three decimal places, of the contents of cell A5. The internal functions can also be used in formulas: **+A2+INT(A5)/(A6)**. Don't forget to close all parentheses.

## TAKING THE LOGARITHM, SQUARE, AND SQUARE ROOT

INTERNAL FUNCTIONS: LOG10

LN

EXP

SQRT

### Definition:

The internal functions are those which are not listed in the *Function* menu, but are accessible from the keyboard.

### What they do:

LOG10: calculates the base 10 logarithm of a positive number.  
LN : calculates the natural logarithm of a positive number.  
EXP : calculates the exponential of a number.  
SQRT : calculates the square root of a positive number.

### Examples:

+LOG10(3) is .477121254479  
+LOG10(1) is 0  
+LN(5) is 1.6094379132  
+EXP(4) is 54.598150075  
+SQRT(2) is 1.4142135624

### NOTE

Internal functions can be applied to cell names: **SQRT(A2)** gives the square root of the number in cell A2. If a function is impossible to calculate the **ERROR** message will be displayed in the cell: for example, this will be the case with **SQRT(-2)**, or **LN(-4)**.

Don't forget to close all parentheses. The name of the function can be abbreviated by typing the first letter of the function followed by an open parentheses, **[**.

## PI AND ERRORS

INTERNAL FUNCTIONS: PI  
NA  
ERROR

### Definition:

The number *pi* is written "PI" in Mouse Calc. The function *NA* stands for a number that is Not Available in a file. The function *ERROR* is displayed when a calculation is impossible.

### Example:

In cell **A1** type **+PI** return.

A1 will display 3.1415926536.

In cell **A2** type **+A1/0** return.

A2 will display **ERROR** since this calculation is impossible.

In cell **A3** type **+NA** return.

A3 will display **NA**.

In cell **A4** type **+A3+1** return.

A4 will display **NA**, since the formula uses a cell whose value is not available.

### NOTE

The values **NA** and **ERROR** are carried over to all cells whose formula uses a cell with the value **NA** or **ERROR**.



## LOGICAL EXPRESSIONS

INTERNAL FUNCTIONS: TRUE  
FALSE  
AND  
NOT  
OR

### Definition:

A logical expression is any expression which yields the result *TRUE* or *FALSE*.

### How to use them:

Logical expressions can be combined with one another using the logical operators *NOT*, *AND*, and *OR*.

### Examples:

In cell **A1** type **3>2**

This is a true logical expression, since 3 is greater than 2. Consequently, A1 will display the word *TRUE*.

In cell **A2** type **5<3**

This expression is false, since 5 is not smaller than 3, so A2 will display the word *FALSE*.

In cell **A3** type **(NOT(A1))**

This is the negation of a true expression, so A3 will have *FALSE*.

In cell **A4** type **(AND(A1...A2))**

A logical expression of the form "X AND Y" is true only if X and Y are each true. This is not the case, so A4 will display the word *FALSE*.

In cell **A5** type **(OR(A1...A2))**

An expression of the form "X OR Y" is true if either X or Y is true, so A5 will have *TRUE*.

### NOTE

*Logical expressions combine according to the rules of classical Boolean algebra. They are also used as arguments of the function **IF**.*

### See:

*IF*

## ***IF***

**INTERNAL FUNCTION:** IF

### ***Definition:***

The internal function *IF* is used to make the value of a given cell depend on the value of some logical expression.

### ***Example:***

Click on cell **A1** and type **5**.

In **A2** type **+IF(A1 > 2;10;5)**.

Since this logical expression is true, cell A2 will have the value 10.

Now type **1** in cell **A1**.

This logical expression is false, so cell A2 will have the value 5.

The format for the *IF* statement is :

+IF(expression; if true; if false)

### ***See:***

*Logical Expressions.*

## USING AN INDEX

INTERNAL FUNCTION: CHOOSE

### Definition:

The internal function *CHOOSE* is used to find a value identified by its numerical position in a range of the file.

### Example:

In cell **A1** type **2**.  
In cell **A2** type **4**.  
In cell **A3** type **6**.  
In cell **A4** type **8**.  
In cell **B1** type **+CHOOSE(1;A1...A4)** It will yield 2.  
In cell **B2** type **+CHOOSE(3;A1...A4)** It will yield 6.  
In cell **B3** type **+CHOOSE(1;A2...A4)** It will yield 4.  
In cell **C8** type **3**.  
In cell **B4** type **+CHOOSE(C8;A1...A4)** It will yield 6.

### NOTE

*The first number is the index indicating the numerical rank in the range of the value to be consulted. The index can also be a cell name, as in **+CHOOSE(C8;A1...A4)**. In this case the index is the contents of cell C8. Since C8 contains 3, it will find the third element in the range.*

## FINDING A VALUE INDIRECTLY

INTERNAL FUNCTION: LOOKUP

### Definition:

The internal function *LOOKUP* is used to find a value in a given range as a function of values from another range.

### Example:

Suppose there is a file with a table containing:  
a search range A1...A4  
a result range B1...B4

	A	B
1	2.5	12
2	3.5	13
3	4.5	14
4	5.5	15

Typing **+LOOKUP(3;A1...A4)** will give the result 12. The *LOOKUP* function compares the values in the search range (A1...A4) to the number 3. When it finds a number higher than 3 (here 3.5), Mouse Calc takes the value in the result range of the cell corresponding to the **preceding** cell of the search range. Here, the cell containing 3.5 is A2, and the preceding cell is A1. The value in B1, the result cell corresponding to A1, is 12. Typing **+LOOKUP(4;A1...A4)** would give 13.

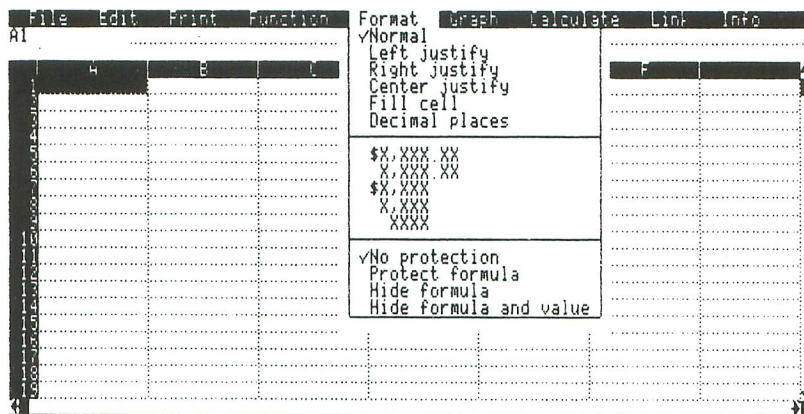
The search and result ranges must be in adjacent columns or rows. The result range is always the row below the search range when the search range is in a row, and the column to the right of the search range when the search range is in a column.

### NOTE

*This operation is similar to what one does when looking up a tax figure in a tax table: first one finds the correct income bracket, then one consults another column for values to use in computing the tax corresponding to that bracket.*

## 6. FORMAT

The *Format* menu contains commands which allow you to change the way text and values are displayed on the screen in order to make your spreadsheet more professional and easier to read. It also has commands which allow you to hide and protect your formulas and numbers. Keep in mind that these functions only affect the way the numbers *appear*, and that they do not affect their true values.



## FORMATTING THE CONTENTS OF A CELL

**MENU:** Format

**COMMANDS:** Normal  
Left justify  
Right justify  
Center justify

### Definition:

A format is a way of presenting the values in a cell. The command *Normal* is used to justify numbers to the right and text to the left within a cell. The command *Left justify* is used to justify both numbers and text to the left. The command *Right justify* puts both numbers and text on the right. The command *Center justify* places both numbers and text in the center of the cell.

### What to do:

Click the cell (or select the block) that you want the format to apply to. Select the desired command.

### Example:

This is how two cells, one with numbers, one with text, would look when the format named is chosen:

The screenshot shows a spreadsheet with a menu bar at the top: File, Edit, Print, Function, Format, Graph, Calculate, Link, Info. The spreadsheet grid has columns labeled A through F and rows numbered 1 through 10. The following table represents the data visible in the spreadsheet:

	A	B	C	D	E	F
1		Normal	ABC	123		
2		Left justify	ABC	123		
3		Right justify	ABC	123		
4		Center justify	ABC	123		
5						
6						
7						
8						
9						
10						

### NOTE

The default format for every cell in the spreadsheet is the normal format. The **Normal** command is used to return to the default case (i.e. numbers to the right, text to the left) for cells where the format had previously been changed. Even when the contents of a cell have been changed, the cell's format remains what it was until a new format is chosen.



## FILLING AN AREA WITH A CHARACTER

**MENU:** Format

**COMMAND:** Fill cell

### Definition:

The command *Fill cell* is used to repeat a specific character to fill a cell.

### What to do:

Click the cell you want to fill in with a character. Type the character, then confirm it by pressing . Select the *Fill cell* command.

### Example:

Type  in cell **A3**, then press .

Select the *Fill cell* command.

The character "x" will fill cell A3.

### NOTE

*This command is used mainly for design purposes. The character chosen is used as a decorative motif, for instance, to separate rows or groups of rows. It is also useful when totaling columns or separating notes in a spreadsheet. This command will fill a cell of any size with the chosen character. The operations of copying and pasting can be used to fill a row, column, or range with the same character, use **Fill cell** to fill a cell, then **Copy** the cell and **Paste** it into the desired area.*

### See:

*Copy* in the *Edit* menu.  
*Paste* in the *Edit* menu.

## SETTING THE DECIMAL PLACEMENT

**MENU:** Format

**COMMAND:** Decimal places

### Definition:

The command *Decimal places* is used to set the number of digits that appear after the decimal point.

### What to do:

Click the cell (or select the block) to which the format is to apply. Select the *Decimal places* command. The work line will display *Number of digits after decimal point (1 to 6):*. Type the number of decimal places you want, then press return. The contents of the cell will be displayed as specified.

### Example:

A cell has the value  
It will display:

12.3456

with the normal default format  
with *Decimal places* set to 1  
with 2 decimals  
with 3 decimals  
etc.

12.3456  
12.3  
12.35  
12.346

### NOTE

*The format does not change the real value of a cell, only the way the number is presented. The last figure is rounded off. The format of a cell will remain even if the contents of the cell are modified. If a number does not fit into the cell when it is expressed in the chosen format, the cell will be filled with the character \*. In such a case, either the format or the column width must be changed.*

### See:

*Column width* in the *Edit* menu.

## VALUE FORMATTING

**MENU:** Format

**COMMANDS:** \$X,XXX.XX  
X,XXX.XX  
\$X,XXX  
X,XXX  
XXXX

### Definition:

Value formatting is a way of presenting numbers in cells.

### What to do:

Click the cell (or select the block) to which the format command is to apply. Select the desired format. The contents of the cell or range will be displayed as the command specifies.

### Example:

Below is an example of how 3 numbers would be formatted using each of the number formats.

<u>Format</u>	<u>8142</u>	<u>12.5</u>	<u>13.18</u>
\$X,XXX.XX	\$8,142.00	\$12.50	\$13.18
X,XXX.XX	8,142.00	12.50	13.18
\$X,XXX	\$8,142	\$13	\$13
X,XXX	8,142	13	13
XXXX	8142	13	13

### NOTE

*The format does not change the real value of the cell, only the way the number is displayed. The format is preserved for the cell even if its contents are changed. If a number does not fit into the cell when it is expressed with the chosen format, the cell will be filled with the character \*. In such a case either the format or the column width must be changed.*

### See:

Column width in the *Edit* menu.

## PROTECTING A CELL

**MENU:** Format

**COMMANDS:** No protection  
Protect formula

### Definition:

The command *Protect formula* is used to prevent anyone from writing into a specified cell or range. The command *No protection* is used to eliminate a cell's protection.

### What to do:

Click the cell (or select the block) that you want to protect. Select the *Protect formula* command. Now the cell's contents are protected.

### Example:

Cell A1 contains 3.

Click **A1**.

Select the *Protect formula* command.

Try to type a character into A1.

The work line will display:

Impossible, cell is protected! → Click

### NOTE

*This operation protects any cell no matter what it contains. Protecting a cell will **not** prevent something from being Pasted into it. To remove the protection use the command **No protection**.*

### See:

*Paste* in the *Edit* menu.

## HIDING FORMULAS AND VALUES

**MENU:** Format

**COMMANDS:** Hide formula  
Hide formula and value

### Definition:

The *Hide formula command* is used to prevent a formula from being displayed on the content line (the second line on your screen). The *Hide formula and value* command is used to also prevent the value from being displayed in a cell. The *No protection* command restores the normal display for formula and cell.

### What to do:

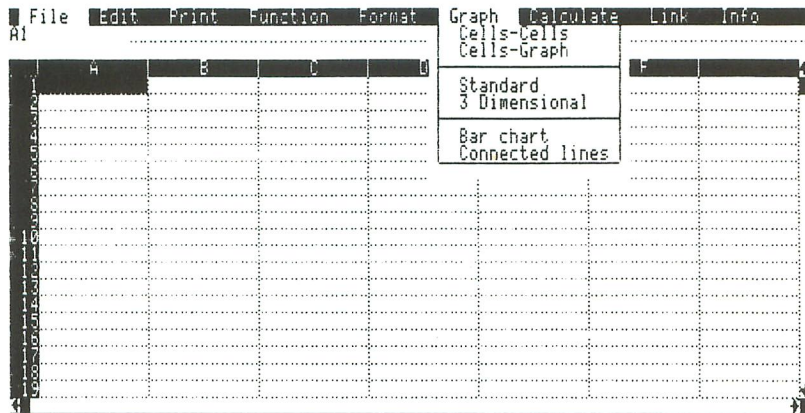
Click the cell (or select the block) that you want to protect. Select the command *Hide formula* or *Hide formula and value* and the content line will display only the cell type: *Text* or *Value*. When you choose *Hide formula and value* the cell display will also disappear.

### NOTE

To bring back the normal displays, select **No protection**. The two commands **Hide formula** and **Hide formula and value** protect the contents of a cell against any attempt to write over them.

## 7. GRAPH

The *Graph* menu is used to tell Mouse Calc to display a graph. It also contains commands which allow you to choose the type of graph.





## OPENING A WINDOW

### Definition:

Mouse Calc allows you to open a window on the screen so that you can display two sections of your spreadsheet at the same time. You can also use the window to display some of your spreadsheet and a graph at the same time.

### What to do:

To open a window, put the pointer in the lower right hand corner of the screen. Holding down the mouse button, move the pointer horizontally to the left. Release the button. The screen will divide into two vertical windows at the point where the button was released. To move from one window to the other, all you need to do is click in the window you want.

To divide the screen into two horizontal windows, move the mouse vertically rather than horizontally. To go from one window to the other, you can also type ☐.

### NOTE

*Each window will contain two elevators which you can use to move horizontally or vertically. Movement in each window is independent. Any changes made in one window will affect the other.*

### See:

*Cells-Graph* in the *Graph* menu.  
"Making a graph".  
"More about graphing".

## MAKING A GRAPH

**MENU:** Graph

**COMMANDS:** Cells-Cells  
Cells-Graph

### Definition:

With Mouse Calc, a window can be opened to display two separate areas of your spreadsheet or to display one area and a graph of the information contained in the file. The *Cells-Graph* command puts a graph in one window, the *Cells-Cells* command puts cells back in both windows.

### What to do:

To make a graph, you name the cells that are to be represented using *Name a range*. Open a window on the screen. Select *Cells-Graph*.

### Example:

Making a graph.

Click **A1** and type **2** .

Click **A2** and type **3** .

Click **A3** and type **4** .

Click **A4** and type **1** .

Click **A5** and type **2** .

Select cells A1 through A5.

Select the *Name a range* command in the *Calculate* menu.

Type **CHART1** then press .

Open a window.

Select *Cells-Graph*.

The graph will appear in the second window.

### NOTE

*The lowest value of the series is not represented, but it is used as the base for the value scale given on the left of the graph. Cell values can be changed by simply retyping them, and whenever they are, the graph will readjust automatically. The scale of the graph is calculated automatically on the basis of the maximum and minimum values of the cells in the range. The numbers at the bottom of the graph are those of the cells. To get the two windows to display cells, select **Cells-Cells**.*

### See:

*Name a range* in the *Calculate* menu.

"Opening a window".

"More about graphing".

## MORE ABOUT GRAPHING

### Definition:

Mouse Calc can simultaneously represent up to eight series of values on a single graph. The value counting as value zero (the base line) of the graph can be chosen freely. The maximum and minimum values can be defined. A graph that is larger than the screen can be viewed.

### What to do:

The first series of values represented in the graph must be named **CHART1**. The following series of values must be named **CHART2** through **CHART8**. Naming a cell **ZERO** indicates that the value in that cell is the value on the base line. Click on a cell. Select the command *Name a range* in the *Calculate* menu. Type the word **ZERO**. Changing the value in the cell you have just named ZERO changes the base line. The **ZERO** range can extend over three cells. In this case, the value of the first cell is still the value of the base line. The following cells specify the maximum and minimum values of the scale to be used. Use the horizontal elevator at the bottom of the graphic window to move along the graph.

### Example:

Continue the example presented in "Making a graph".  
Select range **B2 ... B4**.  
Select the *Name a range* command in the *Calculate* menu.  
Type the name **ZERO**, then press return.  
In cell **B2** type the number **0**.  
The graph will reorganize with 0 as the base line.  
In cell **B3** type **10**. Now the scale extends from 0 to 10.  
In cell **B4** type **-5**. Now the scale extends from -5 to 10.

### See:

*Name a range* in the *Calculate* menu.  
"Making a graph".

## HOW GRAPHS LOOK

**MENU:** Graph

**COMMANDS:** Standard  
3 Dimensional  
Bar chart  
Connected lines

### Definition:

Mouse Calc can include up to eight series of numbers on the same graph (you can scroll using the elevator to see more of the graph if needed). This allows very complicated graphs to be produced. To make a complex bar graph easier to read, it can be displayed in 3 dimensions. The results can also be represented as a series of points (one for each value) connected by straight lines.

### What to do:

Selecting the *3 Dimensional* command creates a relief graph. Selecting the *Standard* command returns the graph to its default two-dimensional form. Selecting the *Connected lines* command gives a point to point curve. Selecting the *Bar chart* command returns the display to the bar graph.

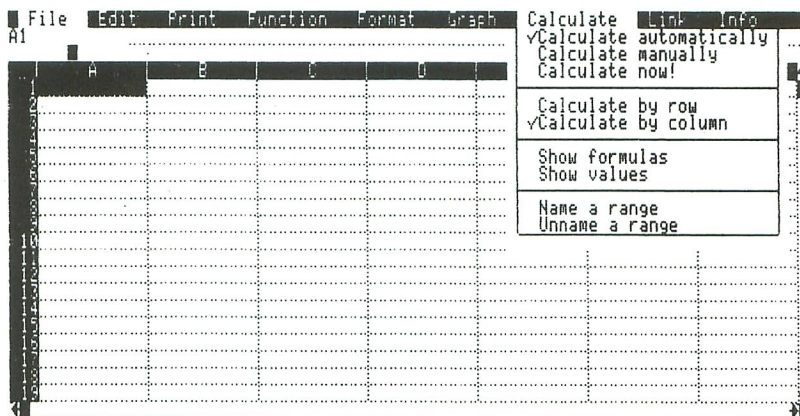
### See:

"Making a graph".

"More about graphing".

## 8. CALCULATE

The *Calculate* menu contains commands that allow you to choose how and when you want the spreadsheet to recalculate itself. This is useful for making quick entries when you have a large spreadsheet. It also contains commands which allow you to define *ranges* in your spreadsheet for use in functions and drawing graphs.





## CALCULATION MODES

**MENU:** Calculate

**COMMANDS:** Calculate automatically  
Calculate manually  
Calculate now!

### Definition:

Normally, Mouse Calc recomputes the values in the spreadsheet every time new information is entered into a cell. Thus the default option is *Calculate automatically*. The *Calculate manually* command is used to suspend automatic recalculating after each entry. The *Calculate now!* command triggers a specific calculation when Mouse Calc is in the manual mode.

### Example:

Suppose that a series of formulas is in a given spreadsheet. Selecting *Calculate manually* allows you to enter new data more quickly, without having to wait for the values to be recalculated each time you press **return**. Once you have entered all your information, selecting *Calculate now!* will calculate the results. Any time you wish, you can select *Calculate automatically* to return to the default mode, and the calculation will first be carried out as soon as you start entering any new data, and then again after each **return**.

### NOTE

*While the calculation is being carried out, the hourglass symbol (X) will replace the mouse pointer and also appear at the beginning of the fourth line on your screen.*



## ORDER OF CALCULATION

**MENU:** Calculate

**COMMANDS:** Calculate by row  
Calculate by column

### Definition:

Mouse Calc performs its calculations column by column, starting with column A. Thus the *Calculate by column* command is the default option. In certain cases, it may be useful to calculate the values in a spreadsheet row by row. With the *Calculate by row* command, the calculations are done row by row, starting with row 1.

### What to do:

Select either of these commands.

#### NOTE

*Selecting either of these commands does not start the calculation.*

### See:

"Calculation modes".

## DISPLAYING FORMULAS IN CELLS

**MENU:** Calculate

**COMMANDS:** Show formulas  
Show values

### Definition:

The *Show formulas* command is used to display calculation formulas in cells. The *Show values* command is used to get back to the normal display of values.

### What to do:

To see all formulas used in your spreadsheet at once, select *Show formulas*.

### NOTE

*Some formulas are too long to be displayed fully in a cell. In such a case only the beginning of the formula will be displayed. Formulas can be printed by selecting the **Show formulas** command and then selecting **Print cells**.*

### See:

*Print cells* in the *Print* menu.  
*Print screen* in the *Print* menu.

## NAMING A CELL

**MENU:** Calculate

**COMMAND:** Name a range

### Definition:

This command is used to name a cell, or adjacent cells.

### What to do:

The *Name a range* command can be used to name a single cell. Click the cell. Select the *Name a range* command. The work line will display *Create range with the name:*. Type the name followed by .

### Example:

A tax rate is often used in a spreadsheet. Rather than memorizing the number of the cell containing the tax formula, it is simpler to give the cell a name such as "Tax".

In **A1** type **7/100** then press .

Select *Name a range*.

The work line will display *Create range with name:*.

Type **TAX** then press . Now the cell name can be used in other formulas.

In **A2** type the value **200** then press .

In **A3** type the formula **+A2\*TAX** then press .

A3 will display 14, the result of multiplying 200 by the tax rate.

### NOTE

*Range names can consist of alphabetical or numerical characters, but the first character must be a letter. Names can contain the "underline" character.*

*The names DELTA, ZERO, CHART1 ... CHART8 are reserved for special purposes: namely, iterated calculations and graphs. The **Unname a range** command is used to remove a name from a range.*

To find out what ranges are defined at any time, select the *Unname a range* command and a window will appear on the screen with the names of the ranges. Click on [Exit window] to return to your spreadsheet.

### See:

*Cells-graph* in the *Graph* menu.

*Unname a range* in the *Calculate* menu.

"Iterated calculation".

## NAMING A RANGE

**MENU:** Calculate  
**COMMAND:** Name a range

### Definition:

This command is used to name a cell or group of adjacent cells.

### What to do:

The *Name a range* command can be used to name cells in the same row or in the same column. Select the range, then select the *Name a range* command. The work line will display *Create range with the name:*. Type the range name, then press return.

### Example:

Select range **B1 ... B3**.  
Select the *Name a range* command and type the name **PRICE** then press return.

It is also possible to obtain complex names by intersecting a row bearing a name with a column bearing a name. For example:

Select range **A3 ... F3**.  
Select the *Name a range* command and type the name **JANUARY**, then press return.  
Cell B3, which is located at the point where the two ranges cross is now named "PRICE.JANUARY".

To verify this:

Type **120** in **B3**, then press return.  
Type **+PRICE.JANUARY\*5** in C4.  
Cell C4 will now display 600.

### NOTE

*Names of composite ranges can be used in formulas. PRICE.JANUARY and JANUARY.PRICE name the same cell, and hence the same value. The **Unname a cell** command in the **Calculate** menu is used to remove a name from a range.*

To find out what ranges are defined at any time, select the *Unname a range* command and a window will appear on the screen with the names of the ranges. Click on (Exit window) to return to your spreadsheet.

■ **See:**

*Unname a range* in the *Calculate* menu.

## UNNAMING A RANGE

**MENU:** Calculate

**COMMAND:** Unname a range

### Definition:

The *Unname a range* command is used to cancel a name that has been given to a cell or range.

### What to do:

Select the *Unname a range* command. A window with all of the range names for that spreadsheet will appear on the screen. Click the range name you want to erase.

The window will remain open in case you want to unname more than one range. Select (Exit window) when you are finished with this option.

### See:

*Name a range* in the *Calculate* menu.  
"Naming a cell".



## ITERATED CALCULATION

### Definition:

Mouse Calc allows iterative calculation: a calculation will be repeated as often as necessary to converge on a specified degree of precision. The values will be more precise each time the calculation is performed. Calculation will stop when the specified degree of accuracy is reached.

### What to do:

Naming a cell **DELTA** has a specific function. When it is used, the calculation is automatically repeated until the difference of the cell being worked on is smaller than the value of the cell named DELTA.

### Example:

Calculate the value of the series  $1+1/2+1/4+1/8...$ , etc. to a precision of  $1/10,000$ :

Select the *Calculate manually* command in the *Calculate* menu. (You MUST do this.)

In **A1** type **2**, then press return.

Again in **A1** type **+A1/2** then press return. Cell A1 will display 1.

In **A2** type **+A2+A1** then press return. Cell A2 will display 1.

Click **B1** and type **1/10000** then press return. Cell B1 will display .0001.

Select the *Name a range* command in the *Calculate* menu.

Type **DELTA** then press return.

Select the *Calculate now!* command in the *Calculate* menu.

This triggers the iterated calculation. Successive values will be displayed on the screen until the desired DELTA (.0001) is reached.

Cell A1 will then display .00006104.

Cell A2 will display 1.9999390.

The exact result is 2. The final result approximates this to a precision of  $1/10000$ .

### NOTE

You can redo the calculation to a still greater degree of accuracy by changing the value in cell B1 to  $1/100000$ .

### See:

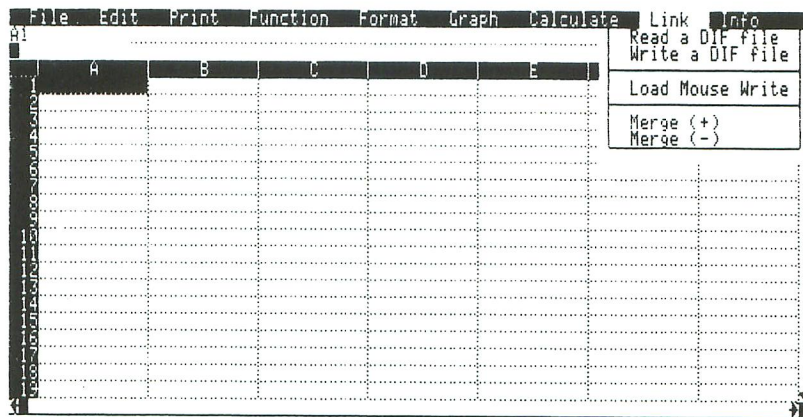
*Calculate manually* in the *Calculate* menu.

*Calculate now!* in the *Calculate* menu.

*Name a cell* in the *Calculate* menu.

## 9. LINK

The *Link* menu allows you to share information between Mouse Calc and Mouse Write, and with other word processing programs. This lets you incorporate parts of your spreadsheet into documents and memos. This menu also allows Mouse Calc to share information with other spreadsheet packages which is especially useful for graphing spreadsheets that were created using a program other than Mouse Calc.



## READING AND WRITING DIF FILES

**MENU:** Link

**COMMANDS:** Read a DIF file  
Write a DIF file

### Definition:

DIF™ is a standard file structure used by many Apple II spreadsheet programs. These commands allow you to read a spreadsheet in the DIF format created by another program and write Mouse Calc spreadsheets into the DIF format for other programs to read.

### What to do:

To write a DIF file, select the *Write a DIF file* command.

The work line will ask:

By row or by column? (Row/Col):.

Type "C" for columns or "R" for rows (you may also click on the words Row or Col).

The disk drive will run and then DIF Filename: will appear.

Type the name you want to give it and press .

The drive will run again.

When it stops, the file is saved, and has been recorded on disk.

To read a DIF file, select the *Read a DIF file* command.

A window will appear with the file catalog.

Click the name of the file you want to read.

The drive will operate.

When it stops, the spreadsheet will appear on the screen.

### NOTE

*The DIF standard allows data to be exchanged between programs. The DIF standard saves values but not formulas.*

## SWITCHING TO MOUSE WRITE

**MENU:** Link

**COMMAND:** Load Mouse Write

### Definition:

This command is used to exit Mouse Calc and enter Mouse Write, a word processing program designed to be used with Mouse Calc.

### What to do:

Select the *Load Mouse Write* command. Mouse Calc will ask if you want to save the current file. After typing "Y" or "N" you will quit Mouse Calc.

### NOTE

*Mouse Write is another Version Soft product that is sold separately.*

## MERGE

**MENU:** Link

**COMMANDS:** Merge (+)  
Merge (-)

### Definition:

The *Merge* command is used to add together or subtract out the values of two spreadsheets having the same structure and format.

### What to do:

Select the *Merge (+)* command. The catalog will appear in a window. Click the name of the spreadsheet you want to merge to the current spreadsheet. Once you have done this, the values of the two spreadsheets will be added together cell by cell. When you select this command, the spreadsheet in memory and the one you select must have the exact same format.

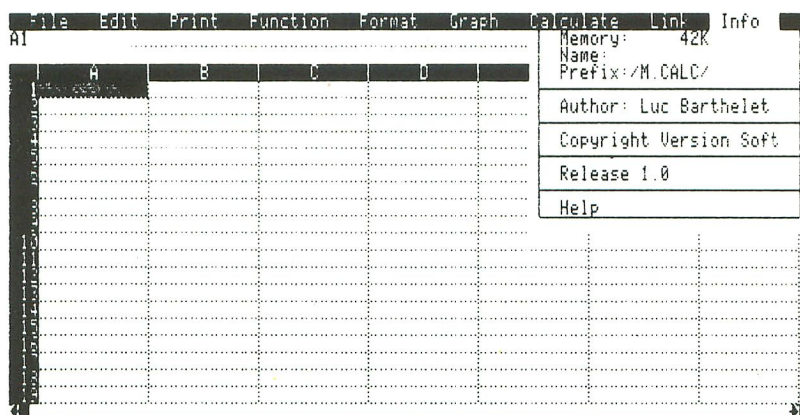
The *Merge (-)* command subtracts the values cell by cell. It works in the same fashion. You select the *Merge (-)* command and a window will appear. Click the name of the spreadsheet whose values you want to subtract out of the values currently in memory. The values of the spreadsheet you have just selected are subtracted from those of the current spreadsheet cell by cell.

### NOTE

*This option is useful for consolidating results, or for comparing forecasted and actual results. The two spreadsheets must have the exact same structure.*

## 10. INFO

The *Info* menu contains information about the current file in memory and about Mouse Calc itself. It tells you how much memory is still available as well as the name and prefix of the file. You can also call up Mouse Calc's Help screens from this menu.





## CHANGING THE NAME OF A FILE

**MENU:** Info

**COMMAND:** Name

### Definition:

The *Name* command is used to change the name of the current spreadsheet.

### What to do:

Select the *Name* command. The work line will ask you for the new name. Type in the new name, and confirm it by pressing

return.

### NOTE

*A filename may contain from 1 to 15 alphabetical or numerical characters. If you type more than 15 characters, only the first fifteen will be used. The first character must be a letter of the alphabet. The period (.) is allowed. Spaces are converted to periods, and all letters are converted to upper case. This option can be used to save different versions of the same file by giving slightly different names to each version.*

### See:

*New* in the *File* menu.

## CHANGING A PREFIX

**MENU:** Info

**COMMAND:** Prefix

### Definition:

The *Prefix* command is used to change the prefix. The prefix is the name of the current volume and subdirectory (if any).

### What to do:

Select the *Prefix* command. The work line will ask for the new prefix. Type the prefix, followed by .

### NOTE

*The prefix contains the name of the volume, followed by the names of any subdirectories, if needed. The prefix can also be changed using some of the commands from the file menu, such as **Select volume**, **Open**, **Delete**, **Catalog**, and **Read a text file**.*

### See:

*Select volume* in the *File* menu.

*Catalog* in the *File* menu.

*Open* in the *File* menu.

*Delete* in the *File* menu.

*Read a text file* in the *File* menu.

## HELP!

**MENU:** Info  
**COMMAND:** Help

### **Definition:**

Mouse Calc provides help screens which explain many of Mouse Calc's commands and functions. This allows you to find out how to do many things without having to open up the manual.

### **What to do:**

Insert the Mouse Calc disk and select the *Help* command. The help catalog will appear on the screen. Click the area you want *Help* in and the help screen will appear.  
When you want to get back to the current file, press esc.




## WRITING YOUR OWN "HELP" FILES

### Definition:

Mouse Calc's Help screens are standard ASCII text files that you can edit yourself using Mouse Write or any other standard word processing program. They function the way they do because of a few properly placed characters. With this information you can write your own "Help" files in order to explain the organization or formulas of a specific spreadsheet that you need to pass out to friends or co-workers.

### What to do:

Help files can be a maximum of 3000 characters long. The very first character of your help file must be a number on a line by itself. This number tells Mouse Calc how many pages there are in the file. The end of each page must be designated by an ampersand (&). Thus, the number of ampersands must correspond to the number on the top line of the file. Each page can be up to 24 lines long.

Once you have written your help file, you can store it on the same disk as the spreadsheet it describes. To look at it, you must make sure that the volume (or prefix) is set to that disk, then just select *Read a text file* from the *File* menu. After you have selected the proper file, Mouse Calc will accept any of 3 inputs from the user. It will accept  or  to move forward or back a page, or  to exit back into Mouse Calc.

### NOTE

*The easiest way to write your own help file is to use Mouse Write or another word processing program to edit one of Mouse Calc's existing help files so that it contains your own information. Then change the filename and save it on the same disk as the spreadsheet it describes.*

### See:

*Read a text file* in the *File* menu.

## ***SAMPLE FILES***

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## A WORD ABOUT THE SAMPLE FILES

This section contains descriptions of 10 sample Mouse Calc spreadsheets. These files are on the disk SAMPLES in the subdirectory TEMPLATES. They were designed to provide examples of some of the functions that you have already learned in the Mouse Calc Tutorial and Reference manual. They are also intended to serve as ready-made spreadsheets (or “templates”) which you can use “as is” by merely putting your own numbers into the existing spreadsheets.

The following pages describe each of the files. Along with each spreadsheet in the prefix /SAMPLES/TEMPLATES, you will find a text file describing the spreadsheet. These files can be read while the spreadsheet is currently loaded in memory. At any time, just select *Read a text file* from the *File* menu, then click on the name of the text file and it will appear on the screen. To get back to your spreadsheet, just press esc. These files demonstrate the usefulness of the *Read a text file* feature of Mouse Calc. To find out more about how to use them and write your own, see “Writing Your Own Help Files” in chapter 10 of the Reference manual.

To begin working with the files, you must set your prefix to /SAMPLES/TEMPLATES. With the SAMPLES disk in one of the drives, do the following:

Select *Select volume* from the *File* menu.

Click on SAMPLES to activate it.

Now select *Open* in the *File* menu.

Click on TEMPLATES which has the file folder icon beside it.

You should see a list of the 10 sample files as well as the text files describing each one. You are now ready to explore Mouse Calc’s sample files.



## MANAGING YOUR BANK ACCOUNT

FILE: BANK

PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.

Select *Select volume*, then click on SAMPLES.

Select *Open*.

Click on TEMPLATES.

Click on BANK.

### Purpose:

This spreadsheet is for keeping a record of your bank account transactions.

### Organization of the spreadsheet:

Column A is for the Transaction Date.

Column B for Debits (Checks Paid, Fees, etc.).

Column C for Credits (Deposits, Interest, etc.).

Column D for the Posting Date.

Column E for a Description of the operation.

Cell B19 gives the Debit Total.

Cell C19 gives the Credit Total.

Cell E19 gives the Final Balance.

Column E has been enlarged.

All amounts are given in the \$X,XXX.XX format.

### What to do:

For each operation, enter:

- the date; remember to type a quotation mark (") first to tell Mouse Calc that you are typing in text.
- the amount; in column B if it is a credit, in column C if it is a debit.
- the posting date; preceded by a quotation mark.
- the description (Cash Deposit, Check from John, Check to John, etc.).

The balance will be recalculated automatically after each operation.

### What was used:

The format \$X,XXX.XX.

The function *Sum*.

Entering text that begins with a number.

## **GENERATING RANDOM NUMBERS**

**FILE:** RANDOM

**PREFIX:** /SAMPLES/TEMPLATES

### **How to open the file:**

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on RANDOM.

### **Purpose:**

This spreadsheet generates a series of random numbers.

### **Organization of the spreadsheet:**

Cell B3 contains the number 1.  
The seed (starting number) is a randomly chosen number between 0 and 1.  
The seed is a constant in its first use.  
In the second use it is the computed random number.  
The random number in B5 is the decimal portion of the seed multiplied by 29.

### **What to do:**

Type the number 0 in cell B3.  
A new number will appear in B5.  
To calculate each successive number in the series, select *Calculate now!*.  
The series of numbers successively displayed in B5 is randomly chosen.  
To start from the beginning of the series again, type 1 in B3.

### **What was used:**

Complex formulas.  
The internal function *INT* which returns the integer value of a number.

## DOING AN ITERATIVE CALCULATION

FILE: RANDOM.IT  
PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on RANDOM.IT.

### Purpose:

This spreadsheet demonstrates an iterative calculation.

### Organization of the spreadsheet:

This file does the same calculation as in the RANDOM file.  
Cell B13 is named *DELTA* and contains 0 (zero). The calculation is repeated as long as the variation of the numbers is greater than *DELTA*.  
Since the numbers are always different, the calculation will be repeated indefinitely.

### What to do:

Type 0 (zero) in cell B3.  
The series of random numbers will appear in B5. To stop the series, press esc.

### What was used:

Naming a cell *DELTA* with the *Name a range* command.  
Iterative calculation.  
Calculation with *DELTA*.

## HEADS OR TAILS

FILE: COIN

PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on HEADS.TAILS.

### Purpose:

This file simulates the tossing of a coin.

### Organization of the spreadsheet:

This spreadsheet also uses iterative calculation.  
Cell B7 represents "heads", and contains 1 when the random number is greater than 0.5.  
Cell B8 represents "tails", and it contains 0 when B7 has 1, and it contains 1 when B7 has 0.

### What to do:

Type 0 (zero) in B3.  
The values in B7 and B8 will change as functions of the random number generated.  
To stop the generation of random numbers press ESC.

### What was used:

The internal function *INT*, which computes the integer value of a number.

## GRAPHING HEADS OR TAILS

FILE: COIN.GRAPH  
PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on COIN. GRAPH.

### Purpose:

This spreadsheet represents the results of a number of coin tossings as a graph.

Cell C7 keeps count of the number of occurrences of "heads".  
Cell C8 counts the number of occurrences of "tails".  
Cell C9 gives the total number of tosses.  
The graph represents these three cells.

### What to do:

Select *Calculate manually*.  
Open a vertical window.  
Select *Cells-Graph*.  
Type 0 (zero) in B3.  
Select *Calculate now!*.  
The graph will be redrawn after each toss. It represents the difference between the number of occurrences of "heads" and the number of occurrences of "tails". To stop the generation of random numbers, press esc.

### What was used:

*Calculate manually*.  
Opening a window.  
*Cells-Graph*.  
*Calculate now!*  
Iterative calculation.

## GRAPH USING "ZERO"

FILE: GRAPH.ZERO

PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on GRAPH.ZERO.

### Purpose:

This spreadsheet represents the occurrences of "heads" or "tails" as a graph, starting from zero.

### Organization of the spreadsheet:

This file also uses the Heads or Tails graph.  
Cell B15 has been named ZERO and contains the value 0.  
Cells B7 and B8 constitute the range named CHART2.

### What to do:

Select *Calculate manually*.  
Open a vertical window.  
Select *Cells-Graph*.  
Type 0 (zero) in cell B3.  
Select *Calculate now!*

The graph will be redrawn after each toss. It displays the number of occurrences of "heads", "tails", and the total number of tosses.

The last toss is indicated by a second bar.

To stop the generation of random numbers, press esc.

The value of cell B15, the cell called ZERO, which represents the bottom of the vertical axis of the graph, can be changed at any time.

To see this, try the value 100.

Type 100 in B15, then start the calculation by selecting *Calculate now!*.

Press esc to stop the calculation.

### What was used:

*Calculate manually*.  
Opening a window.  
*Cells-Graph*.  
*Calculate now!*



## **BELL CURVES**

FILE: GAUSS

PREFIX: /SAMPLES/TEMPLATES

### **How to open the file:**

Insert the SAMPLES disk.

Select *Select volume*, then click on SAMPLES.

Select *Open*.

Click on TEMPLATES.

Click on GAUSS.

### **Purpose:**

This spreadsheet plots a bell curve, also called a Gaussian distribution, and represents it in graph form.

### **Organization of the spreadsheet:**

Each cell of the spreadsheet is the sum of two of the cells located on the row above it. Four rows of the spreadsheet are represented in the graph:

CHART1 represents row 11.

CHART2 represents row 13.

CHART3 represents row 14.

CHART4 represents row 15.

### **What to do:**

Open a horizontal or vertical window.

Select *Cells-Graph*.

The curves will be displayed in bar chart form.

To see them in 3-D, select *3 Dimensional* from the *Graph* menu. The graph will become 3-dimensional.

To change the graph, select *Connected lines*.

The graph will now be displayed as a set of connected lines.

### **What was used:**

Opening a window.

*Cells-Graph*.

*3 Dimensional*.

*Connected lines*.

## ■ **USING "LOOKUP"**

**FILE:** LOOKUP

**PREFIX:** /SAMPLES/TEMPLATES

### ■ **How to open the file:**

Insert the SAMPLES disk.  
Select *Select volume*, then click on SAMPLES.  
Select *Open*.  
Click on TEMPLATES.  
Click on LOOKUP.

### ■ **Purpose:**

This spreadsheet is a demonstration of the internal function *LOOKUP*.

### ■ **Organization of the spreadsheet:**

Cell B4 contains the starting value.  
Range B6 to B11 contains the values to be compared by the function to the starting value.  
Range C6 to C11 contains the potential results of the search.  
Cell C14 displays the result of the search.

### ■ **What to do:**

To get a firmer grasp of the way *LOOKUP* works, change the value of cell B4 as follows:

Type each of the following in B4: 5 , 6 , 7 , 10 , 20 .

After each change, note the result in C14.

Now try the value 1. The result is *NA* (value not available).

### ■ **What was used:**

The internal function *LOOKUP*.  
The internal function *NA*.

## USING "CHOOSE"

FILE: CHOOSE

PREFIX: /SAMPLES/TEMPLATES

### How to open the file:

Insert the SAMPLES disk.

Select *Select volume*, then click on SAMPLES.

Select *Open*.

Click on TEMPLATES.

Click on the down arrow in the window.

Click on CHOOSE.

### Purpose:

This spreadsheet is a demonstration of the internal function *CHOOSE*.

### Organization of the spreadsheet:

Cell B4 contains the starting value.

Range B6 to B11 contains the potential results of the function.

### What to do:

To get a firmer grasp of the way *CHOOSE* works, change the values in cell B4 as follows:

Type each of the following in B4: 2 , 3 , 4 .

After each change, note the result in C14.

Now try the values 0 and 10. The result is *NA* (value not available).

### What was used:

The internal function *CHOOSE*.

The internal function *NA*.

## GRAPHING AN AGE PYRAMID

**FILE:** POPULATION

**PREFIX:** /SAMPLES/TEMPLATES

### *How to open the file:*

Insert the SAMPLES disk.

Select *Select volume*, then click on SAMPLES.

Select *Open*.

Click on TEMPLATES.

Click on the down arrow in the window.

Click on POPULATION.

### *Purpose:*

This spreadsheet illustrates the computing power of Mouse Calc. It models the evolution of the population of an average size country.

### *Organization of the spreadsheet:*

Columns C and D give the male and female population by age group for the year 1984.

Columns A and B give the age groups used.

Columns E and F give the latest population figures calculated.

Initially, columns E and F are equal to columns C and D.

During calculation they contain the result of the preceding calculation.

Columns G and H give the mortality rate by age group.

Column J gives the number of births as a function of the female population and the birth rate for each age group.

Column I represents the birth rate.

Columns K and L represent the population calculated as a function of the preceding data.

The total number of births is distributed between males and females as a function of a rate given in cell 07.

The population of a given age group is calculated as a function of the current population and its mortality rate.

To make the graph easier to read, the female population is graphed on the bottom half of the graph.

### **What to do:**

Select *Calculate manually*.

Open a horizontal window to display the graph.

Select *Cells-Graph*.

The age pyramid will appear for the first 17 age groups.

To see the following groups, use an elevator in the window with the graph.

To start the iterative calculation:

Type 0 (zero) in 04.

Select *Calculate now!*

The spreadsheet will be recalculated.

The graph projects the age pyramid into the future in 5 year intervals.

The latest year calculated is displayed in 06.

To stop the calculation, press esc.

The birth and death rates in columns H, I, and J can be changed.

To bring the spreadsheet back to the year 1984, type 1 in 04, then select *Calculate now!*

### **What was used:**

*Calculate manually.*

Opening a window.

*Cells-Graph.*

*Calculate now!*

# *APPENDIX A - FUNCTIONS*

Command

*ABS()*  
*AND()*  
*AVERAGE()*

*CHOOSE()*  
*COLUMN*  
*COUNT()*

*ERROR*  
*EXP()*

*FALSE*

*IF()*  
*INT()*

*LN()*  
*LOG10()*  
*LOOKUP()*

*MAX()*  
*MIN()*

*NA*  
*NOT()*

*OR()*

*PI*

*ROUND()*

*SQRT()*  
*SUM()*

*TRUE*



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